

ANNUAL GROUNDWATER EXTRACTION SYSTEM PERFORMANCE REPORT HELENA, MONTANA

Prepared For:

CITY OF HELENA
HELENA, MONTANA



Hydrometrics, Inc.
consulting scientists and engineers

NOVEMBER 2012

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DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU



Hydrometrics, Inc.

consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
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November 19, 2012

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

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NOV 20 2012

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

On behalf of the City of Helena, I am submitting the annual groundwater extraction system performance report for the City of Helena Landfill, plant ID 049 0014. The groundwater extraction system was installed in the spring of 2000 and is located just north of the landfill boundary. This treatment system includes three extraction wells (HL-99-1, HL-99-2, and HL-99-3) to intercept tetrachloroethene (PCE) impacted groundwater migrating downgradient of the landfill. The extracted groundwater is pumped through aeration nozzles into two lined ponds located on Bill Roberts Golf Course. In accordance with regulations, the treated water is sampled monthly to ensure the treatment goals have been met prior to land application on the golf course.

The groundwater extraction system operated May 8, 2012 through October 16, 2012 for a total of 151 days. The batteries in the flowmeter displays were replaced in all three extraction wells prior to startup and calibration of the system in May. Hydrometrics' personnel winterized the extraction system after the system was shut down in mid-October. Several tables showing all the data collected at the groundwater extraction system over the last year and calculations performed with that data are included as Attachment A to this report. A summary of the operational data is shown in Table 1. With a combined average flow of 79.1 gpm from the three extraction wells, a total of 14 million gallons of groundwater was extracted and treated this year.

Groundwater samples are collected in December 2011 and June 2012 from each of the extraction wells. The field book notes, sampling forms and lab reports for this sampling were included in the December 2011 and June 2012 data validation reports you have already received. Table 2 includes a summary of the sample results. Only those parameters that were detected in at least one extraction well during the December 2011 or June 2012 sampling events were included. Assuming a conservative treatment level of 0.0005 mg/L for each compound and the total volume pumped for each well, the estimated mass of volatile organic compounds (VOCs) removed from each well was calculated. These values are also shown in Table 2.

TABLE 1. SUMMARY OF OPERATIONAL DATA

Extraction Well	Days Operated	Average Flowrate (gpm)	Total Volume Removed (gal)
HL-99-1	151.2	12.8	2,691,150
HL-99-2	129.8*	26.8	5,402,819
HL-99-3	106.9**	29.5	6,184,150
Total	144	69.1	14,278,119

*This well had excessive drawdown in June (due to HL-99-3 not pumping) and the pump shutdown.

**This well was inoperable during May and the first half of June due to maintenance and repair issues.

**TABLE 2. EXTRACTION WELL SAMPLE RESULTS
AND MASS OF VOCs REMOVED**

VOC	HL-99-1		HL-99-2		HL-99-3		Total	
	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)
1,1-Dichloroethane	<0.001	0.0000	0.0023	0.0377	0.0021	0.0323	0.0016	0.0700
Chloroform	0.0016	0.0112	0.0015	0.0216	0.0021	0.0323	0.0017	0.0650
Cis-1,2-dichloroethane	0.0016	0.0117	<0.001	0.0000	<0.001	0.0000	0.0010	0.0117
Dichlorodifluoromethane	<0.001	0.0000	0.0012	0.0160	0.0009	0.0088	0.00092	0.0248
Tetrachloroethene (PCE)	0.0034	0.0303	0.0045	0.0852	0.0049	0.0905	0.0042	0.2060
Trichloroethene (TCE)	0.0067	0.0018	0.0010	0.0110	<0.001	0.0000	0.00084	0.0198
Trichlorofluoromethane	<0.001	0.0000	0.00047	0.0000	0.00030	0.0000	0.00042	0.0000
Total Mass Removed		0.055		0.171		0.171		0.397

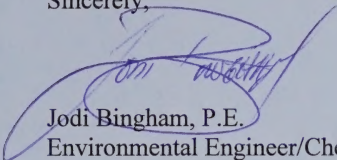
The sample results from the extraction wells indicate that the average PCE concentration being extracted from the system is 0.0042 mg/L. A total of 0.40 kg of VOC's were removed by the groundwater extraction system during the 2012 irrigation season.

During system operation, surface water samples were collected on a monthly basis from the golf course sprinkler system. These water quality samples ensure that treatment goals are met. In addition, a single sample was collected from the east golf course pond during the June sampling event. The field book notes, sampling forms and lab reports for each of these sampling events has been included as Attachment B to this report. The results from the monthly sampling events indicate that all VOCs were below their respective laboratory

detection limits prior to land application with the exception of methylene chloride (0.00050 mg/L) during the June sampling event.

If you have any questions concerning this data or need any additional information to complete your files, please do not hesitate to call me at 443-4150, Ext. 172.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jodi Bingham", is written over a circular blue ink stamp. The signature is fluid and cursive.

Jodi Bingham, P.E.
Environmental Engineer/Chemist

- c: John Rundquist, City of Helena Public Works Director (w/attachments)
Pete Anderson, City of Helena Solid Waste Supervisor (w/attachments)
Mike Wignot, Hydrometrics, Inc. (w/out attachments)

ATTACHMENT A

**DATA ANALYSIS FOR THE
GROUNDWATER EXTRACTION SYSTEM**

HL-99-1

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 1 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate	
					Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Avg. Flow and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
5/8/2012	10:06	0.0	2,785,616	14.61	0	0			14.61	0
5/31/2012	10:00	339.6	2,966,350	14.22	*Reset pump - flowmeter reading 14.22 gpm					
	last period to date				551.9	339.6	180,734	293,720	14.42	8.9
					551.9	339.6	180,734	293,720	14.42	8.9
6/27/2012	15:30	969.1	3,485,970	13.94						
	last period to date				653.5	629.5	519,620	531,802	14.08	13.8
					1205.4	969.1	700,354	828,968	14.26	12.0
7/31/2012	11:05	1780.6	4,079,970	11.56						
	last period to date				811.6	811.5	594,000	620,759	12.75	12.2
					2017.0	1780.6	1,294,354	1,451,059	13.58	12.1
8/28/2012	10:00	2451.4	4,557,140	11.83						
	last period to date				670.9	670.9	477,170	470,735	11.70	11.9
					2687.9	2451.4	1,771,524	1,946,215	13.23	12.0
9/26/2012	15:10	3152.9	5,064,930	12.11						
	last period to date				701.2	701.5	507,790	503,817	11.97	12.1
					3389.1	3152.9	2,279,314	2,467,775	13.05	12.0
10/16/2012	10:45	3628.1	5,414,270	12.16						
	last period to date				475.6	475.2	349,340	345,993	12.14	12.3
					3864.7	3628.1	2,628,654	2,812,192	12.92	12.1
Average/Total for 2012 Operating Season					3864.7	3628.1	2,628,654	2,812,192	12.9	12.1

VOC Sample Data (mg/L):

VOC	Cleanup Level*	12/8/2011	6/25/2012	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.00066	0.00059	0.00063	0.0013
Chloroform	0.0005	0.0012	0.0019	0.0016	0.0112
Cis-1,2-dichloroethane	0.0005	0.0016	0.0016	0.0016	0.0117
Dichlorodifluoromethane	0.0005	0.00068	0.00049	0.00059	0.0009
Tetrachloroethene	0.0005	0.0035	0.0032	0.0034	0.0303
Trichloroethene	0.0005	0.00067	0.00066	0.00067	0.0018
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0000
Total					0.0572

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0034 mg/L PCE - 0.0005 mg/L) * 2,812,192 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.0303 kg PCE removed

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate	
					Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
5/8/2012	10:18	0.0	2,431,771	53.5	0	0			53.5	0
5/31/2012	10:05	339.4	3,037,770	48.4	*Reset pump - flowmeter reading 48.38 gpm					
	last period to date				551.8	339.4	605,999	985,210	48.38	29.8
					551.8	339.4	605,999	1,037,342	50.9	29.8
6/27/2012	16:15	458.1	3,244,470	28.44	* Reset pump					
	last period to date				654.2	118.7	206,700	273,556	38.41	29.0
					1206.0	458.1	812,699	1,193,992	43.44	29.6
7/31/2012	11:00	1268.6	4,443,200	22.78						
	last period to date				810.8	810.5	1,198,730	1,245,337	25.61	24.7
					2016.7	1268.6	2,011,429	2,913,225	38.28	26.4
8/28/2012	10:05	1939.5	5,202,650	20.78						
	last period to date				671.1	671.0	759,450	876,797	21.78	18.9
					2687.8	1939.5	2,770,879	4,046,883	34.78	23.8
9/26/2012	15:15	2640.9	6,052,790	19.72						
	last period to date				701.2	701.4	850,140	852,201	20.25	20.2
					3388.9	2640.9	3,621,019	5,112,782	32.27	22.9
10/16/2012	10:40	3116.1	6,612,510	19.72						
	last period to date				475.4	475.2	559,720	562,257	19.72	19.6
					3864.4	3116.1	4,180,739	5,697,655	30.47	22.4
Average/Total for 2012 Operating Season					3864.4	3116.1	4,180,739	5,697,655	30.5	22.4

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/8/2011	6/25/2012	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0024	0.0021	0.0023	0.0377
Chloroform	0.0005	0.0015	0.0015	0.0015	0.0216
Cis-1,2-dichloroethane	0.0005	0.00077	0.00070	0.00074	0.0051
Dichlorodifluoromethane	0.0005	0.0015	0.00098	0.0012	0.0160
Tetrachloroethene	0.0005	0.0049	0.0040	0.0045	0.0852
Trichloroethene	0.0005	0.0011	0.00092	0.0010	0.0110
Trichlorofluoromethane	0.0005	0.00043	<0.001	0.00047	0.0000
Total					0.1765

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0045 mg/L PCE - 0.0005 mg/L) * 5,697,655 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.0852 kg PCE removed

Operational Data:

Operational Data.

				Hours Operated		Volume Extracted		Flowrate		
Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
6/14/2012	18:08	0.0	6,459,810	41.2	0	0			41.24	0
7/31/2012	10:55 last period to date	718.6	6,526,770	37.5	Flowmeter not working but pump is pumping. Flow est.					
					1120.8	718.6	66,960	1,698,336	39.39	1.6
					1120.8	718.6	66,960	1,698,336	39.4	1.6
8/28/2012	10:10 last period to date	1389.7	6,526,770	35.3	Flowmeter not working but pump is pumping. Flow est.					
					671.3	671.1	0	1,466,964	36.43	0.0
					1792.0	1389.7	66,960	3,171,397	38.0	0.8
9/26/2012	15:20 last period to date	2091.0	6,526,770	33.0	Flowmeter not working but pump is pumping. Flow est.					
					701.2	701.3	0	1,437,654	34.17	0.0
					2493.2	2091.0	66,960	4,614,188	36.8	0.5
10/16/2012	10:35 last period to date	2565.7	6,526,770	31.4	Flowmeter repaired.					
					475.2	474.7	0	917,818	32.22	0.0
					2968.4	2565.7	66,960	5,497,350	35.7	0.4
Average/Total for 2012 Operating Season					2968.4	2565.7	66,960	5,497,350	35.7	0.4

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/8/2011	7/25/2012	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0011	0.0030	0.0021	0.0323
Chloroform	0.0005	0.0019	0.0022	0.0021	0.0323
Cis-1,2-dichloroethane	0.0005	0.00043	0.00080	0.00062	0.0024
Dichlorodifluoromethane	0.0005	0.00065	0.0012	0.00093	0.0088
Tetrachloroethene	0.0005	0.0037	0.0060	0.0049	0.0905
Trichloroethene	0.0005	0.00058	0.0011	0.00084	0.0071
Trichlorofluoromethane	0.0005	0.00023	0.00037	0.00030	0.0000
Total					0.1733

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 = (0.0049 mg/L PCE - 0.0005 mg/L)*5,497,350 gallons water *
 3.785 L/gal * 1/10*6 kg/mg = 0.0905 kg PCE removed

ANALYTICAL SUMMARY REPORT

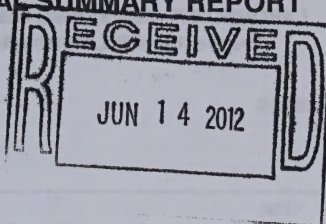
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ATTACHMENT B

FIELD BOOK NOTES, SAMPLING FORMS AND
LAB REPORTS FOR SURFACE WATER SAMPLES

ANALYTICAL SUMMARY REPORT



June 11, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H12050479

Project Name: 1273 City of Helena Landfill

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 5/31/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12050479-001	CHHL-1205-100	05/31/12 10:15	05/31/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2012.06.13 09:26:12 -06:00



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H12050479-001
Client Sample ID CHHL-1205-100

Report Date: 06/11/12
Collection Date: 05/31/12 10:15
Date Received: 05/31/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/04/12 21:55 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/04/12 21:55 / abb
Benzene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Bromoform	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Chloroform	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/04/12 21:55 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/04/12 21:55 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/04/12 21:55 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Styrene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Toluene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Prepared by Helena, MT Branch

Report Date: 06/11/12
Collection Date: 05/31/12 10:15
DateReceived: 05/31/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/04/12 21:55 / abb
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	06/04/12 21:55 / abb
Surr: Dibromofluoromethane	101	%REC		70-130		SW8260B	06/04/12 21:55 / abb
Surr: p-Bromofluorobenzene	95.0	%REC		70-130		SW8260B	06/04/12 21:55 / abb
Surr: Toluene-d8	114	%REC		70-130		SW8260B	06/04/12 21:55 / abb

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/11/12

Project: 1273 City of Helena Landfill

Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R80441
Sample ID: CCV060412A	54 Continuing Calibration Verification Standard									06/04/12 16:30
Acetone		60.0	ug/L	20	120	70	130			
Acrylonitrile		56.8	ug/L	20	114	70	130			
Benzene		4.80	ug/L	1.0	96	70	130			
Bromochloromethane		4.48	ug/L	1.0	90	70	130			
Bromodichloromethane		5.68	ug/L	1.0	114	70	130			
Bromoform		5.24	ug/L	1.0	105	70	130			
Bromomethane		4.64	ug/L	1.0	93	70	130			
Carbon disulfide		5.64	ug/L	1.0	113	70	130			
Carbon tetrachloride		4.60	ug/L	1.0	92	70	130			
Chlorobenzene		4.72	ug/L	1.0	94	70	130			
Chlorodibromomethane		4.60	ug/L	1.0	92	70	130			
Chloroethane		5.68	ug/L	1.0	114	70	130			
Chloroform		4.44	ug/L	1.0	89	80	120			
Chloromethane		4.72	ug/L	1.0	94	70	130			
1,2-Dibromo-3-chloropropane		4.64	ug/L	1.0	93	70	130			
1,2-Dibromoethane		4.80	ug/L	1.0	96	70	130			
Dibromomethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichlorobenzene		4.76	ug/L	1.0	95	70	130			
1,4-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		5.08	ug/L	1.0	102	70	130			
1,1-Dichloroethane		4.40	ug/L	1.0	88	70	130			
1,2-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,1-Dichloroethene		5.60	ug/L	1.0	112	80	120			
cis-1,2-Dichloroethene		4.76	ug/L	1.0	95	70	130			
trans-1,2-Dichloroethene		5.24	ug/L	1.0	105	70	130			
1,2-Dichloropropane		6.00	ug/L	1.0	120	80	120			
cis-1,3-Dichloropropene		5.44	ug/L	1.0	109	70	130			
trans-1,3-Dichloropropene		5.00	ug/L	1.0	100	70	130			
Ethylbenzene		4.96	ug/L	1.0	99	80	120			
2-Hexanone		51.6	ug/L	20	103	70	130			
Iodomethane		5.28	ug/L	1.0	106	70	130			
Methyl ethyl ketone		59.6	ug/L	20	119	70	130			
Methyl isobutyl ketone		52.8	ug/L	20	106	70	130			
Methylene chloride		5.56	ug/L	1.0	111	70	130			
Styrene		4.48	ug/L	1.0	90	70	130			
1,1,1,2-Tetrachloroethane		4.32	ug/L	1.0	86	70	130			
1,1,2,2-Tetrachloroethane		4.88	ug/L	1.0	98	70	130			
Tetrachloroethene		5.20	ug/L	1.0	104	70	130			
Toluene		5.08	ug/L	1.0	102	80	120			
1,1,1-Trichloroethane		4.24	ug/L	1.0	85	70	130			
1,1,2-Trichloroethane		4.72	ug/L	1.0	94	70	130			
Trichloroethene		5.72	ug/L	1.0	114	70	130			
Trichlorofluoromethane		5.92	ug/L	1.0	118	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 06/11/12
Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R80441
Sample ID: CCV060412A	54 Continuing Calibration Verification Standard									06/04/12 16:30
1,2,3-Trichloropropane		5.24	ug/L	1.0	105	70	130			
Vinyl acetate		5.40	ug/L	1.0	108	70	130			
Vinyl chloride		5.36	ug/L	1.0	107	80	120			
m+p-Xylenes		9.56	ug/L	1.0	96	70	130			
o-Xylene		4.56	ug/L	1.0	91	70	130			
Xylenes, Total		14.1	ug/L	1.0	94	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	102	70	130			
Surr: Dibromofluoromethane				1.0	94	70	130			
Surr: p-Bromofluorobenzene				1.0	102	70	130			
Surr: Toluene-d8				1.0	112	70	130			

Method: SW8260B										Batch: R80441
Sample ID: LCS060412A	54 Laboratory Control Sample									06/04/12 17:07
				Run: 1SATURN_120604A						
Acetone		52.8	ug/L	20	106	70	130			
Acrylonitrile		53.6	ug/L	20	107	70	130			
Benzene		4.92	ug/L	1.0	98	70	130			
Bromochloromethane		4.72	ug/L	1.0	94	70	130			
Bromodichloromethane		5.24	ug/L	1.0	105	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		4.16	ug/L	1.0	83	70	130			
Carbon disulfide		5.88	ug/L	1.0	118	70	130			
Carbon tetrachloride		4.76	ug/L	1.0	95	70	130			
Chlorobenzene		4.72	ug/L	1.0	94	70	130			
Chlorodibromomethane		4.72	ug/L	1.0	94	70	130			
Chloroethane		6.00	ug/L	1.0	120	70	130			
Chloroform		4.44	ug/L	1.0	89	70	130			
Chloromethane		4.32	ug/L	1.0	86	70	130			
1,2-Dibromo-3-chloropropane		4.80	ug/L	1.0	96	70	130			
1,2-Dibromoethane		4.88	ug/L	1.0	98	70	130			
Dibromomethane		4.76	ug/L	1.0	95	70	130			
1,2-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
1,4-Dichlorobenzene		4.96	ug/L	1.0	99	70	130			
trans-1,4-Dichloro-2-butene		4.96	ug/L	1.0	99	70	130			
Dichlorodifluoromethane		4.68	ug/L	1.0	94	70	130			
1,1-Dichloroethane		4.56	ug/L	1.0	91	70	130			
1,2-Dichloroethane		4.92	ug/L	1.0	98	70	130			
1,1-Dichloroethene		5.60	ug/L	1.0	112	70	130			
cis-1,2-Dichloroethene		4.92	ug/L	1.0	98	70	130			
trans-1,2-Dichloroethene		5.36	ug/L	1.0	107	70	130			
1,2-Dichloropropane		5.96	ug/L	1.0	119	70	130			
cis-1,3-Dichloropropene		5.24	ug/L	1.0	105	70	130			
trans-1,3-Dichloropropene		4.80	ug/L	1.0	96	70	130			
Ethylbenzene		4.88	ug/L	1.0	98	70	130			
2-Hexanone		45.2	ug/L	20	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/11/12

Project: 1273 City of Helena Landfill

Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80441
Sample ID: LCS060412A	54	Laboratory Control Sample				Run: 1SATURN_120604A				06/04/12 17:07
Iodomethane		4.20	ug/L	1.0	84	70	130			
Methyl ethyl ketone		54.8	ug/L	20	110	70	130			
Methyl isobutyl ketone		48.0	ug/L	20	96	70	130			
Methylene chloride		5.40	ug/L	1.0	108	70	130			
Styrene		4.48	ug/L	1.0	90	70	130			
1,1,1,2-Tetrachloroethane		4.40	ug/L	1.0	88	70	130			
1,1,2,2-Tetrachloroethane		4.60	ug/L	1.0	92	70	130			
Tetrachloroethene		4.88	ug/L	1.0	98	70	130			
Toluene		5.04	ug/L	1.0	101	70	130			
1,1,1-Trichloroethane		4.32	ug/L	1.0	86	70	130			
1,1,2-Trichloroethane		4.68	ug/L	1.0	94	70	130			
Trichloroethene		5.68	ug/L	1.0	114	70	130			
Trichlorofluoromethane		5.60	ug/L	1.0	112	70	130			
1,2,3-Trichloropropane		4.36	ug/L	1.0	87	70	130			
Vinyl acetate		5.96	ug/L	1.0	119	70	130			
Vinyl chloride		4.96	ug/L	1.0	99	70	130			
m+p-Xylenes		9.88	ug/L	1.0	99	70	130			
o-Xylene		4.76	ug/L	1.0	95	70	130			
Xylenes, Total		14.6	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	102	70	130			
Surr: Dibromofluoromethane				1.0	98	70	130			
Surr: p-Bromofluorobenzene				1.0	93	70	130			
Surr: Toluene-d8				1.0	107	70	130			
Sample ID: H12060001-015DMS	54	Sample Matrix Spike				Run: 1SATURN_120604A				06/04/12 17:51
Acetone		99.2	ug/L	40	99	70	130			
Acrylonitrile		118	ug/L	40	118	70	130			
Benzene		10.3	ug/L	2.0	103	70	130			
Bromochloromethane		10.3	ug/L	2.0	103	70	130			
Bromodichloromethane		11.8	ug/L	2.0	118	70	130			
Bromoform		10.6	ug/L	2.0	106	70	130			
Bromomethane		10.7	ug/L	2.0	107	70	130			
Carbon disulfide		12.9	ug/L	2.0	129	70	130			
Carbon tetrachloride		10.5	ug/L	2.0	105	70	130			
Chlorobenzene		17.0	ug/L	2.0	88	70	130			
Chlorodibromomethane		9.60	ug/L	2.0	96	70	130			
Chloroethane		9.28	ug/L	2.0	93	70	130			
Chloroform		10.2	ug/L	2.0	95	70	130			
Chloromethane		9.60	ug/L	2.0	96	70	130			
1,2-Dibromo-3-chloropropane		9.84	ug/L	2.0	98	70	130			
1,2-Dibromoethane		9.76	ug/L	2.0	98	70	130			
Dibromomethane		10.4	ug/L	2.0	104	70	130			
1,2-Dichlorobenzene		11.0	ug/L	2.0	105	70	130			
1,4-Dichlorobenzene		13.0	ug/L	2.0	108	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/11/12

Project: 1273 City of Helena Landfill

Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80441
Sample ID: H12060001-015DMS	54	Sample Matrix Spike		Run: 1SATURN_120604A					06/04/12 17:51	
trans-1,4-Dichloro-2-butene		10.8	ug/L	2.0	108	70	130			
Dichlorodifluoromethane		11.4	ug/L	2.0	114	70	130			
1,1-Dichloroethane		10.3	ug/L	2.0	103	70	130			
1,2-Dichloroethane		10.3	ug/L	2.0	103	70	130			
1,1-Dichloroethene		13.0	ug/L	2.0	130	70	130			
cis-1,2-Dichloroethene		10.6	ug/L	2.0	106	70	130			
trans-1,2-Dichloroethene		11.8	ug/L	2.0	118	70	130			
1,2-Dichloropropane		12.8	ug/L	2.0	128	70	130			
cis-1,3-Dichloropropene		11.1	ug/L	2.0	111	70	130			
trans-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130			
Ethylbenzene		10.2	ug/L	2.0	102	70	130			
2-Hexanone		90.4	ug/L	40	90	70	130			
Iodomethane		9.36	ug/L	2.0	94	70	130			
Methyl ethyl ketone		95.2	ug/L	40	95	70	130			
Methyl isobutyl ketone		99.2	ug/L	40	99	70	130			
Methylene chloride		12.6	ug/L	2.0	126	70	130			
Styrene		9.44	ug/L	2.0	94	70	130			
1,1,1,2-Tetrachloroethane		9.20	ug/L	2.0	92	70	130			
1,1,2,2-Tetrachloroethane		10.3	ug/L	2.0	103	70	130			
Tetrachloroethene		11.0	ug/L	2.0	110	70	130			
Toluene		10.9	ug/L	2.0	109	70	130			
1,1,1-Trichloroethane		9.60	ug/L	2.0	96	70	130			
1,1,2-Trichloroethane		10.6	ug/L	2.0	106	70	130			
Trichloroethene		12.0	ug/L	2.0	120	70	130			
Trichlorofluoromethane		12.7	ug/L	2.0	127	70	130			
1,2,3-Trichloropropane		11.9	ug/L	2.0	119	70	130			
Vinyl acetate		12.8	ug/L	2.0	128	70	130			
Vinyl chloride		11.5	ug/L	2.0	115	70	130			
m+p-Xylenes		19.9	ug/L	2.0	100	70	130			
o-Xylene		9.92	ug/L	2.0	99	70	130			
Xylenes, Total		29.8	ug/L	2.0	99	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	104	70	130			
Surr: Dibromofluoromethane				2.0	99	70	130			
Surr: p-Bromofluorobenzene				2.0	101	70	130			
Surr: Toluene-d8				2.0	112	70	130			
Sample ID: H12060001-015DMS	54	Sample Matrix Spike Duplicate		Run: 1SATURN_120604A					06/04/12 18:22	
Acetone		114	ug/L	40	114	70	130	14	20	
Acrylonitrile		118	ug/L	40	118	70	130	0.7	20	
Benzene		10.5	ug/L	2.0	105	70	130	1.5	20	
Bromochloromethane		10.1	ug/L	2.0	101	70	130	2.4	20	
Bromodichloromethane		11.8	ug/L	2.0	118	70	130	0.0	20	
Bromoform		10.1	ug/L	2.0	101	70	130	5.4	20	
Bromomethane		10.5	ug/L	2.0	105	70	130	2.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/11/12

Project: 1273 City of Helena Landfill

Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80441
Sample ID: H12060001-015DMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_120604A 06/04/12 18:22
Carbon disulfide		12.2	ug/L	2.0	122	70	130	5.1	20	
Carbon tetrachloride		9.84	ug/L	2.0	98	70	130	6.3	20	
Chlorobenzene		18.0	ug/L	2.0	98	70	130	5.5	20	
Chlorodibromomethane		10.0	ug/L	2.0	100	70	130	4.1	20	
Chloroethane		8.40	ug/L	2.0	84	70	130	10.0	20	
Chloroform		9.92	ug/L	2.0	93	70	130	2.4	20	
Chloromethane		9.76	ug/L	2.0	98	70	130	1.7	20	
1,2-Dibromo-3-chloropropane		11.0	ug/L	2.0	110	70	130	11	20	
1,2-Dibromoethane		10.6	ug/L	2.0	106	70	130	7.9	20	
Dibromomethane		10.5	ug/L	2.0	105	70	130	0.8	20	
1,2-Dichlorobenzene		10.6	ug/L	2.0	101	70	130	3.7	20	
1,4-Dichlorobenzene		12.2	ug/L	2.0	100	70	130	6.4	20	
trans-1,4-Dichloro-2-butene		9.84	ug/L	2.0	98	70	130	9.3	20	
Dichlorodifluoromethane		11.6	ug/L	2.0	116	70	130	2.1	20	
1,1-Dichloroethane		10.1	ug/L	2.0	101	70	130	2.4	20	
1,2-Dichloroethane		10.7	ug/L	2.0	107	70	130	3.8	20	
1,1-Dichloroethene		12.6	ug/L	2.0	126	70	130	2.5	20	
cis-1,2-Dichloroethene		10.6	ug/L	2.0	106	70	130	0.0	20	
trans-1,2-Dichloroethene		11.2	ug/L	2.0	112	70	130	5.6	20	
1,2-Dichloropropane		13.0	ug/L	2.0	130	70	130	1.2	20	
cis-1,3-Dichloropropene		11.3	ug/L	2.0	113	70	130	1.4	20	
trans-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130	0.8	20	
Ethylbenzene		10.3	ug/L	2.0	103	70	130	0.8	20	
2-Hexanone		109	ug/L	40	109	70	130	18	20	
Iodomethane		8.88	ug/L	2.0	89	70	130	5.3	20	
Methyl ethyl ketone		102	ug/L	40	102	70	130	6.5	20	
Methyl isobutyl ketone		111	ug/L	40	111	70	130	11	20	
Methylene chloride		12.5	ug/L	2.0	125	70	130	1.3	20	
Styrene		9.60	ug/L	2.0	96	70	130	1.7	20	
1,1,1,2-Tetrachloroethane		9.36	ug/L	2.0	94	70	130	1.7	20	
1,1,2,2-Tetrachloroethane		10.2	ug/L	2.0	102	70	130	0.8	20	
Tetrachloroethene		11.3	ug/L	2.0	113	70	130	2.2	20	
Toluene		10.6	ug/L	2.0	106	70	130	3.0	20	
1,1,1-Trichloroethane		9.60	ug/L	2.0	96	70	130	0.0	20	
1,1,2-Trichloroethane		10.1	ug/L	2.0	101	70	130	5.4	20	
Trichloroethene		12.1	ug/L	2.0	121	70	130	0.7	20	
Trichlorofluoromethane		12.6	ug/L	2.0	126	70	130	1.3	20	
1,2,3-Trichloropropane		11.0	ug/L	2.0	110	70	130	7.7	20	
Vinyl acetate		12.6	ug/L	2.0	126	70	130	1.3	20	
Vinyl chloride		11.8	ug/L	2.0	118	70	130	2.7	20	
m+p-Xylenes		21.1	ug/L	2.0	106	70	130	5.8	20	
o-Xylene		10.2	ug/L	2.0	102	70	130	3.2	20	
Xylenes, Total		31.4	ug/L	2.0	105	70	130	5.0	20	
Surr: 1,2-Dichloroethane-d4				2.0	108	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 06/11/12
Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80441
Sample ID: H12060001-015DMSD	54	Sample Matrix Spike Duplicate			Run: 1SATURN_120604A			06/04/12 18:22		
Surr: Dibromofluoromethane				2.0	97	70	130	0.0	20	
Surr: p-Bromofluorobenzene				2.0	97	70	130	0.0	20	
Surr: Toluene-d8				2.0	110	70	130	0.0	20	
Sample ID: MB060412A	54	Method Blank			Run: 1SATURN_120604A			06/04/12 19:23		
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/11/12

Project: 1273 City of Helena Landfill

Work Order: H12050479

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R80441
Sample ID: MB060412A	54	Method Blank					Run: 1SATURN_120604A			06/04/12 19:23
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	103	70	130			
Surr: Dibromofluoromethane				1.0	101	70	130			
Surr: p-Bromofluorobenzene				1.0	96	70	130			
Surr: Toluene-d8				1.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Workorder Receipt Checklist



H12050479

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 5/31/2012

Reviewed by: BL2000\kwiegand

Received by: TLL

Reviewed Date: 6/1/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	

Container/Temp Blank temperature:

12.1°C On Ice Packs

Water - VOA vials have zero headspace? Yes ☒ No ☐ No VOA vials submitted ☐

Water - pH acceptable upon receipt? Yes ☐ No ☐ Not Applicable ☒

Contact and Corrective Action Comments:

None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

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Hydrometrics, Inc.

Hydrometrics, Inc.

Hydrometrics, Inc.

Site	Sample Code	Date	Time	Bottles
Sprinkler	CHHL-12ES-100	5/31/12	10:15	3/UF/HCl/Vol

Weather:
Overcast, 55°

GWES:

Site	Time	Hr	Flow	Totalizer
HL-99-1	10:00	339.6	0	296635 x10
	Restarted		14.22	274430

HL-99-2	10:05	339.4	0	303777 x10
	Restarted		48.38	602906

HL-99-3 Not operating

[Signature]
5/31/12



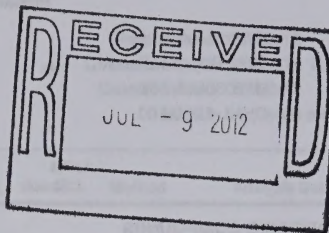
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ANALYTICAL SUMMARY REPORT

July 03, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601



Workorder No.: H12060509 Quote ID: H667 - Landfill Parameters

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 6/28/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12060509-001	CHHL-1206-100	06/27/12 16:15	06/28/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H12060509-002	CHHL-1206-101	06/27/12 16:30	06/28/12	Aqueous	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified if analyzed outside of the recommended holding time.

Solid/soil samples are reported on an as received basis unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2012.07.05 11:01:41 -06:00



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12060509-001
Client Sample ID CHHL-1206-100

Report Date: 07/03/12
Collection Date: 06/27/12 16:15
Date Received: 06/28/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/02/12 13:26 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/02/12 13:26 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/02/12 13:26 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/12 13:26 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/12 13:26 / abb
Methylene chloride	0.50	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb

Report: RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12060509-001
Client Sample ID: CHHL-1206-100

Report Date: 07/03/12
Collection Date: 06/27/12 16:15
Date Received: 06/28/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/02/12 13:26 / abb
Surr: 1,2-Dichloroethane-d4	99.0	%REC		69.7-142		SW8260B	07/02/12 13:26 / abb
Surr: Dibromofluoromethane	94.0	%REC		69.9-128		SW8260B	07/02/12 13:26 / abb
Surr: p-Bromofluorobenzene	102	%REC		83.7-119		SW8260B	07/02/12 13:26 / abb
Surr: Toluene-d8	97.0	%REC		75.5-125		SW8260B	07/02/12 13:26 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12060509-002
Client Sample ID CHHL-1206-101

Report Date: 07/03/12
Collection Date: 06/27/12 16:30
Date Received: 06/28/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/02/12 12:56 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/02/12 12:56 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/02/12 12:56 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/12 12:56 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/02/12 12:56 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12060509-002
Client Sample ID CHHL-1206-101

Report Date: 07/03/12
Collection Date: 06/27/12 16:30
Date Received: 06/28/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/02/12 12:56 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		69.7-142		SW8260B	07/02/12 12:56 / abb
Surr: Dibromofluoromethane	99.0	%REC		69.9-128		SW8260B	07/02/12 12:56 / abb
Surr: p-Bromofluorobenzene	103	%REC		83.7-119		SW8260B	07/02/12 12:56 / abb
Surr: Toluene-d8	102	%REC		75.5-125		SW8260B	07/02/12 12:56 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R81148
Sample ID: CCV070212A										07/02/12 10:07
54 Continuing Calibration Verification Standard										
trans-1,4-Dichloro-2-butene		6.16	ug/L	1.0		0	0			
Acetone		54.4	ug/L	20	109	70	130			
Acrylonitrile		56.8	ug/L	20	114	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		5.92	ug/L	1.0	118	70	130			
Bromodichloromethane		5.12	ug/L	1.0	102	70	130			
Bromoform		5.92	ug/L	1.0	118	70	130			
Bromomethane		4.48	ug/L	1.0	90	70	130			
Carbon disulfide		4.88	ug/L	1.0	98	70	130			
Carbon tetrachloride		5.04	ug/L	1.0	101	70	130			
Chlorobenzene		4.72	ug/L	1.0	94	70	130			
Chlorodibromomethane		4.76	ug/L	1.0	95	70	130			
Chloroethane		4.88	ug/L	1.0	98	70	130			
Chloroform		5.60	ug/L	1.0	112	80	120			
Chloromethane		4.16	ug/L	1.0	83	70	130			
1,2-Dibromo-3-chloropropane		5.16	ug/L	1.0	103	70	130			
1,2-Dibromoethane		4.88	ug/L	1.0	98	70	130			
Dibromomethane		5.00	ug/L	1.0	100	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
Dichlorodifluoromethane		4.64	ug/L	1.0	93	70	130			
1,1-Dichloroethane		5.16	ug/L	1.0	103	70	130			
1,2-Dichloroethane		5.24	ug/L	1.0	105	70	130			
1,1-Dichloroethene		4.80	ug/L	1.0	96	80	120			
cis-1,2-Dichloroethene		4.96	ug/L	1.0	99	70	130			
trans-1,2-Dichloroethene		4.92	ug/L	1.0	98	70	130			
1,2-Dichloropropane		4.96	ug/L	1.0	99	80	120			
cis-1,3-Dichloropropene		5.20	ug/L	1.0	104	70	130			
trans-1,3-Dichloropropene		5.12	ug/L	1.0	102	70	130			
Ethylbenzene		5.08	ug/L	1.0	102	80	120			
2-Hexanone		58.4	ug/L	20	117	70	130			
Iodomethane		4.60	ug/L	1.0	92	70	130			
Methyl ethyl ketone		62.8	ug/L	20	126	70	130			
Methyl isobutyl ketone		59.6	ug/L	20	119	70	130			
Methylene chloride		4.48	ug/L	1.0	90	70	130			
Styrene		4.84	ug/L	1.0	97	70	130			
1,1,1,2-Tetrachloroethane		4.16	ug/L	1.0	83	70	130			
1,1,2,2-Tetrachloroethane		5.28	ug/L	1.0	106	70	130			
Tetrachloroethene		5.20	ug/L	1.0	104	70	130			
Toluene		5.16	ug/L	1.0	103	80	120			
1,1,1-Trichloroethane		5.32	ug/L	1.0	106	70	130			
1,1,2-Trichloroethane		4.68	ug/L	1.0	94	70	130			
Trichloroethene		5.24	ug/L	1.0	105	70	130			
Trichlorofluoromethane		4.76	ug/L	1.0	95	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R81148
Sample ID: CCV070212A	54	Continuing Calibration Verification Standard								07/02/12 10:07
1,2,3-Trichloropropane		5.68	ug/L	1.0	114	70	130			
Vinyl acetate		5.40	ug/L	1.0	108	70	130			
Vinyl chloride		4.96	ug/L	1.0	99	80	120			
m+p-Xylenes		9.04	ug/L	1.0	90	70	130			
o-Xylene		4.76	ug/L	1.0	95	70	130			
Xylenes, Total		13.8	ug/L	1.0	92	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	100	69.7	142			
Surr: Dibromofluoromethane				1.0	94	69.9	128			
Surr: p-Bromofluorobenzene				1.0	107	83.7	119			
Surr: Toluene-d8				1.0	102	75.5	125			

Method: SW8260B										Batch: R81148
Sample ID: LCS070212A	54	Laboratory Control Sample								Run: 1SATURN_120702A
trans-1,4-Dichloro-2-butene		5.44	ug/L	1.0	109	70	123			07/02/12 10:44
Acetone		59.6	ug/L	20	119	57.3	142			
Acrylonitrile		55.6	ug/L	20	111	73.2	133			
Benzene		4.84	ug/L	1.0	97	73.7	125			
Bromochloromethane		5.52	ug/L	1.0	110	64.6	125			
Bromodichloromethane		5.20	ug/L	1.0	104	70.9	126			
Bromoform		5.40	ug/L	1.0	108	68.7	120			
Bromomethane		4.12	ug/L	1.0	82	43.5	144			
Carbon disulfide		5.32	ug/L	1.0	106	62.5	149			
Carbon tetrachloride		4.88	ug/L	1.0	98	68.8	123			
Chlorobenzene		4.72	ug/L	1.0	94	78.3	121			
Chlorodibromomethane		4.80	ug/L	1.0	96	69.7	118			
Chloroethane		5.64	ug/L	1.0	113	49.1	152			
Chloroform		5.08	ug/L	1.0	102	67.6	124			
Chloromethane		4.36	ug/L	1.0	87	67.9	134			
1,2-Dibromo-3-chloropropane		4.84	ug/L	1.0	97	58.2	138			
1,2-Dibromoethane		4.72	ug/L	1.0	94	70.6	114			
Dibromomethane		4.92	ug/L	1.0	98	64.2	126			
1,2-Dichlorobenzene		4.64	ug/L	1.0	93	78	125			
1,4-Dichlorobenzene		4.44	ug/L	1.0	89	78.1	117			
Dichlorodifluoromethane		4.48	ug/L	1.0	90	65.6	148			
1,1-Dichloroethane		4.88	ug/L	1.0	98	73	130			
1,2-Dichloroethane		5.04	ug/L	1.0	101	71	137			
1,1-Dichloroethene		4.64	ug/L	1.0	93	59.3	137			
cis-1,2-Dichloroethene		4.96	ug/L	1.0	99	78.3	122			
trans-1,2-Dichloroethene		4.88	ug/L	1.0	98	69.3	128			
1,2-Dichloropropane		5.00	ug/L	1.0	100	72.3	140			
cis-1,3-Dichloropropene		5.12	ug/L	1.0	102	77	125			
trans-1,3-Dichloropropene		5.24	ug/L	1.0	105	74.7	123			
Ethylbenzene		4.92	ug/L	1.0	98	75.5	130			
2-Hexanone		55.6	ug/L	20	111	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81148
Sample ID: LCS070212A	54	Laboratory Control Sample				Run: 1SATURN_120702A			07/02/12 10:44	
Iodomethane		3.60	ug/L	1.0	72	41.4	130			
Methyl ethyl ketone		64.8	ug/L	20	130	57.5	140			
Methyl isobutyl ketone		57.6	ug/L	20	115	72.7	124			
Methylene chloride		4.08	ug/L	1.0	82	63.1	131			
Styrene		4.72	ug/L	1.0	94	77.2	119			
1,1,1,2-Tetrachloroethane		3.92	ug/L	1.0	78	74	119			
1,1,2,2-Tetrachloroethane		4.76	ug/L	1.0	95	77.6	120			
Tetrachloroethene		4.92	ug/L	1.0	98	72.6	127			
Toluene		4.96	ug/L	1.0	99	65.3	130			
1,1,1-Trichloroethane		5.16	ug/L	1.0	103	72.2	121			
1,1,2-Trichloroethane		4.72	ug/L	1.0	94	74.7	128			
Trichloroethene		5.00	ug/L	1.0	100	69	129			
Trichlorofluoromethane		4.32	ug/L	1.0	86	54.8	141			
1,2,3-Trichloropropane		4.40	ug/L	1.0	88	62.5	131			
Vinyl acetate		5.84	ug/L	1.0	117	72.1	156			
Vinyl chloride		4.88	ug/L	1.0	98	77.7	132			
m+p-Xylenes		8.88	ug/L	1.0	89	76.4	125			
o-Xylene		4.56	ug/L	1.0	91	73.5	127			
Xylenes, Total		13.4	ug/L	1.0	90	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	101	69.7	142			
Surr: Dibromofluoromethane				1.0	96	69.9	128			
Surr: p-Bromofluorobenzene				1.0	101	83.7	119			
Surr: Toluene-d8				1.0	108	75.5	125			
Sample ID: MB070212A	54	Method Blank				Run: 1SATURN_120702A			07/02/12 11:55	
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81148
Sample ID: MB070212A	54	Method Blank				Run: 1SATURN_120702A				07/02/12 11:55
1,4-Dichlorobenzene		ND	ug/L		1.0					
Dichlorodifluoromethane		ND	ug/L		1.0					
1,1-Dichloroethane		ND	ug/L		1.0					
1,2-Dichloroethane		ND	ug/L		1.0					
1,1-Dichloroethene		ND	ug/L		1.0					
cis-1,2-Dichloroethene		ND	ug/L		1.0					
trans-1,2-Dichloroethene		ND	ug/L		1.0					
1,2-Dichloropropane		ND	ug/L		1.0					
cis-1,3-Dichloropropene		ND	ug/L		1.0					
trans-1,3-Dichloropropene		ND	ug/L		1.0					
Ethylbenzene		ND	ug/L		1.0					
2-Hexanone		ND	ug/L		20					
Iodomethane		ND	ug/L		1.0					
Methyl ethyl ketone		ND	ug/L		20					
Methyl isobutyl ketone		ND	ug/L		20					
Methylene chloride		ND	ug/L		1.0					
Styrene		ND	ug/L		1.0					
1,1,1,2-Tetrachloroethane		ND	ug/L		1.0					
1,1,2,2-Tetrachloroethane		ND	ug/L		1.0					
Tetrachloroethene		ND	ug/L		1.0					
Toluene		ND	ug/L		1.0					
1,1,1-Trichloroethane		ND	ug/L		1.0					
1,1,2-Trichloroethane		ND	ug/L		1.0					
Trichloroethene		ND	ug/L		1.0					
Trichlorofluoromethane		ND	ug/L		1.0					
1,2,3-Trichloropropene		ND	ug/L		1.0					
Vinyl acetate		ND	ug/L		1.0					
Vinyl chloride		ND	ug/L		1.0					
m+p-Xylenes		ND	ug/L		1.0					
o-Xylene		ND	ug/L		1.0					
Xylenes, Total		ND	ug/L		1.0					
Surr: 1,2-Dichloroethane-d4					1.0	98	69.7	142		
Surr: Dibromofluoromethane					1.0	97	69.9	128		
Surr: p-Bromofluorobenzene					1.0	101	83.7	119		
Surr: Toluene-d8					1.0	97	75.5	125		
Sample ID: H12060500-001EMS	53	Sample Matrix Spike				Run: 1SATURN_120702A				07/02/12 19:28
Acetone		110	ug/L		40	110	57.3	142		
Acrylonitrile		104	ug/L		40	104	73.2	133		
Benzene		9.92	ug/L		2.0	99	73.7	125		
Bromochloromethane		9.92	ug/L		2.0	99	64.6	125		
Bromodichloromethane		10.2	ug/L		2.0	102	70.9	126		
Bromoform		10.6	ug/L		2.0	106	68.7	120		
Bromomethane		8.64	ug/L		2.0	86	43.5	144		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81148
Sample ID: H12060500-001EMS	53	Sample Matrix Spike		Run: 1SATURN_120702A				07/02/12 19:28		
Carbon disulfide		9.92	ug/L	2.0	99	62.5	149			
Carbon tetrachloride		9.28	ug/L	2.0	93	68.8	123			
Chlorobenzene		9.36	ug/L	2.0	94	78.3	121			
Chlorodibromomethane		9.44	ug/L	2.0	94	69.7	118			
Chloroethane		9.92	ug/L	2.0	99	49.1	152			
Chloroform		9.92	ug/L	2.0	92	67.6	124			
Chloromethane		8.72	ug/L	2.0	87	67.9	134			
1,2-Dibromo-3-chloropropane		10.0	ug/L	2.0	100	58.2	138			
1,2-Dibromoethane		9.84	ug/L	2.0	98	70.6	114			
Dibromomethane		9.60	ug/L	2.0	96	64.2	126			
1,2-Dichlorobenzene		8.32	ug/L	2.0	83	78	125			
1,4-Dichlorobenzene		8.40	ug/L	2.0	84	78.1	117			
Dichlorodifluoromethane		9.76	ug/L	2.0	84	65.6	148			
1,1-Dichloroethane		11.9	ug/L	2.0	96	73	130			
1,2-Dichloroethane		10.4	ug/L	2.0	104	71	137			
1,1-Dichloroethene		8.72	ug/L	2.0	87	59.3	137			
cis-1,2-Dichloroethene		11.6	ug/L	2.0	94	78.3	122			
trans-1,2-Dichloroethene		9.36	ug/L	2.0	94	69.3	128			
1,2-Dichloropropane		9.92	ug/L	2.0	99	72.3	140			
cis-1,3-Dichloropropene		10.5	ug/L	2.0	105	77	125			
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	74.7	123			
Ethylbenzene		10.5	ug/L	2.0	105	75.5	130			
2-Hexanone		129	ug/L	40	129	72.6	127			S
Iodomethane		7.16	ug/L	2.0	72	41.4	130			
Methyl ethyl ketone		130	ug/L	40	130	57.5	140			
Methyl isobutyl ketone		116	ug/L	40	116	72.7	124			
Methylene chloride		7.81	ug/L	2.0	78	63.1	131			
Styrene		8.80	ug/L	2.0	88	77.2	119			
1,1,1,2-Tetrachloroethane		8.80	ug/L	2.0	88	74	119			
1,1,2,2-Tetrachloroethane		9.84	ug/L	2.0	98	77.6	120			
Tetrachloroethene		15.8	ug/L	2.0	92	72.6	127			
Toluene		9.92	ug/L	2.0	99	65.3	130			
1,1,1-Trichloroethane		9.92	ug/L	2.0	99	72.2	121			
1,1,2-Trichloroethane		9.60	ug/L	2.0	96	74.7	128			
Trichloroethene		11.4	ug/L	2.0	98	69	129			
Trichlorofluoromethane		8.80	ug/L	2.0	88	54.8	141			
1,2,3-Trichloropropane		8.64	ug/L	2.0	86	62.5	131			
Vinyl acetate		11.8	ug/L	2.0	118	72.1	156			
Vinyl chloride		9.52	ug/L	2.0	95	77.7	132			
m+p-Xylenes		18.5	ug/L	2.0	92	76.4	125			
o-Xylene		9.44	ug/L	2.0	94	73.5	127			
Xylenes, Total		27.9	ug/L	2.0	93	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	104	69.7	142			
Surr: Dibromofluoromethane				2.0	92	69.9	128			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81148
Sample ID: H12060500-001EMS										07/02/12 19:28
Surr: p-Bromofluorobenzene				2.0	106	83.7	119			
Surr: Toluene-d8				2.0	105	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H12060500-001EMSD										07/02/12 19:59
53 Sample Matrix Spike Duplicate										
Run: 1SATURN_120702A										
Acetone		98.4	ug/L	40	98	57.3	142	11	20	
Acrylonitrile		122	ug/L	40	122	73.2	133	16	20	
Benzene		9.60	ug/L	2.0	96	73.7	125	3.3	20	
Bromochloromethane		9.92	ug/L	2.0	99	64.6	125	0.0	20	
Bromodichloromethane		10.5	ug/L	2.0	105	70.9	126	2.3	20	
Bromoform		11.4	ug/L	2.0	114	68.7	120	8.0	20	
Bromomethane		8.80	ug/L	2.0	88	43.5	144	1.8	20	
Carbon disulfide		9.76	ug/L	2.0	98	62.5	149	1.6	20	
Carbon tetrachloride		9.04	ug/L	2.0	90	68.8	123	2.6	20	
Chlorobenzene		9.52	ug/L	2.0	95	78.3	121	1.7	20	
Chlorodibromomethane		9.44	ug/L	2.0	94	69.7	118	0.0	20	
Chloroethane		9.20	ug/L	2.0	92	49.1	152	7.5	20	
Chloroform		10.1	ug/L	2.0	94	67.6	124	1.6	20	
Chloromethane		8.16	ug/L	2.0	82	67.9	134	6.6	20	
1,2-Dibromo-3-chloropropane		12.2	ug/L	2.0	122	58.2	138	19	20	
1,2-Dibromoethane		10.2	ug/L	2.0	102	70.6	114	3.2	20	
Dibromomethane		10.2	ug/L	2.0	102	64.2	126	5.7	20	
1,2-Dichlorobenzene		8.96	ug/L	2.0	90	78	125	7.4	20	
1,4-Dichlorobenzene		8.48	ug/L	2.0	85	78.1	117	0.9	20	
Dichlorodifluoromethane		9.68	ug/L	2.0	83	65.6	148	0.8	20	
1,1-Dichloroethane		11.4	ug/L	2.0	91	73	130	4.1	20	
1,2-Dichloroethane		9.60	ug/L	2.0	96	71	137	8.0	20	
1,1-Dichloroethene		8.56	ug/L	2.0	86	59.3	137	1.9	20	
cis-1,2-Dichloroethene		11.4	ug/L	2.0	92	78.3	122	2.1	20	
trans-1,2-Dichloroethene		8.96	ug/L	2.0	90	69.3	128	4.4	20	
1,2-Dichloropropane		10.2	ug/L	2.0	102	72.3	140	2.4	20	
cis-1,3-Dichloropropene		10.6	ug/L	2.0	106	77	125	1.5	20	
trans-1,3-Dichloropropene		10.7	ug/L	2.0	107	74.7	123	4.6	20	
Ethylbenzene		10.4	ug/L	2.0	104	75.5	130	0.8	20	
2-Hexanone		132	ug/L	40	132	72.6	127	2.5	20	S
Iodomethane		7.08	ug/L	2.0	71	41.4	130	1.1	20	
Methyl ethyl ketone		126	ug/L	40	126	57.5	140	2.5	20	
Methyl isobutyl ketone		130	ug/L	40	130	72.7	124	11	20	S
Methylene chloride		7.60	ug/L	2.0	76	63.1	131	2.7	20	
Styrene		9.36	ug/L	2.0	94	77.2	119	6.2	20	
1,1,1,2-Tetrachloroethane		9.28	ug/L	2.0	93	74	119	5.3	20	
1,1,2,2-Tetrachloroethane		10.2	ug/L	2.0	102	77.6	120	3.2	20	
Tetrachloroethene		16.8	ug/L	2.0	102	72.6	127	5.9	20	
Toluene		10.1	ug/L	2.0	101	65.3	130	1.6	20	
1,1,1-Trichloroethane		9.68	ug/L	2.0	97	72.2	121	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/03/12
Work Order: H12060509

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81148
Sample ID: H12060500-001EMSD 53 Sample Matrix Spike Duplicate										Run: 1SATURN_120702A 07/02/12 19:59
1,1,2-Trichloroethane		9.52	ug/L	2.0	95	74.7	128	0.8	20	
Trichloroethene		11.7	ug/L	2.0	101	69	129	2.1	20	
Trichlorofluoromethane		8.48	ug/L	2.0	85	54.8	141	3.7	20	
1,2,3-Trichloropropane		9.20	ug/L	2.0	92	62.5	131	6.3	20	
Vinyl acetate		12.6	ug/L	2.0	126	72.1	156	6.6	20	
Vinyl chloride		9.04	ug/L	2.0	90	77.7	132	5.2	20	
m+p-Xylenes		18.1	ug/L	2.0	90	76.4	125	2.2	20	
o-Xylene		9.36	ug/L	2.0	94	73.5	127	0.9	20	
Xylenes, Total		27.4	ug/L	2.0	91	37.8	157	2.0	20	
Surr: 1,2-Dichloroethane-d4				2.0	102	69.7	142			
Surr: Dibromofluoromethane				2.0	94	69.9	128			
Surr: p-Bromofluorobenzene				2.0	108	83.7	119			
Surr: Toluene-d8				2.0	109	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on an as received basis unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Login completed by: Tracy L. Lorash

Date Received: 6/28/2012

Reviewed by: BL2000\ablackburn

Received by: TLL

Reviewed Date: 7/2/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Container/Temp Blank temperature:	1.6°C	On Ice	
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

H2060509

<u>Site</u>	<u>Sample Code</u>	<u>Date</u>	<u>Time</u>	<u>Bottles</u>
Sprinkler	CHHL- 1206- 100	6/27/12	1615	

Pond	CHHL 1206- 101	6/27/12	1630	
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[illegible]

Return results & electronic copy to:

Split Samples:

☐ Accepted ☐ Declined

Signature _____

ANALYTICAL SUMMARY REPORT

August 02, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H12070530

Project Name: 1273 City of Helena Landfill

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 7/31/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12070530-001	CHHL-1207-100	07/31/12 10:45	07/31/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified if analyzed outside of the recommended holding time.

Solid/soil samples are reported on an as received basis unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2012.08.03 11:57:47 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H12070530-001
Client Sample ID CHHL-1207-100

Report Date: 08/02/12
Collection Date: 07/31/12 10:45
Date Received: 07/31/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/31/12 16:39 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/31/12 16:39 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/31/12 16:39 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/31/12 16:39 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/31/12 16:39 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Tetrachloroethene	0.42	ug/L	J	0.50		SW8260B	07/31/12 16:39 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H12070530-001
Client Sample ID CHHL-1207-100

Report Date: 08/02/12
Collection Date: 07/31/12 10:45
Date Received: 07/31/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/31/12 16:39 / abb
Surr: 1,2-Dichloroethane-d4	88.0	%REC		69.7-142		SW8260B	07/31/12 16:39 / abb
Surr: Dibromofluoromethane	89.0	%REC		69.9-128		SW8260B	07/31/12 16:39 / abb
Surr: p-Bromofluorobenzene	106	%REC		83.7-119		SW8260B	07/31/12 16:39 / abb
Surr: Toluene-d8	86.0	%REC		75.5-125		SW8260B	07/31/12 16:39 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Analytical Run: R81885								
Sample ID: CCV073112B		54 Continuing Calibration Verification Standard								07/31/12 10:16
trans-1,4-Dichloro-2-butene		5.76	ug/L	1.0	115	70	130			
Acetone		64.4	ug/L	20	129	70	130			
Acrylonitrile		62.8	ug/L	20	126	70	130			
Benzene		4.44	ug/L	1.0	89	70	130			
Bromochloromethane		5.28	ug/L	1.0	106	70	130			
Bromodichloromethane		4.36	ug/L	1.0	87	70	130			
Bromoform		5.80	ug/L	1.0	116	70	130			
Bromomethane		5.24	ug/L	1.0	105	70	130			
Carbon disulfide		5.20	ug/L	1.0	104	70	130			
Carbon tetrachloride		5.28	ug/L	1.0	106	70	130			
Chlorobenzene		4.48	ug/L	1.0	90	70	130			
Chlorodibromomethane		4.60	ug/L	1.0	92	70	130			
Chloroethane		5.84	ug/L	1.0	117	70	130			
Chloroform		5.64	ug/L	1.0	113	80	120			
Chloromethane		3.64	ug/L	1.0	73	70	130			
1,2-Dibromo-3-chloropropane		5.72	ug/L	1.0	114	70	130			
1,2-Dibromoethane		4.52	ug/L	1.0	90	70	130			
Dibromomethane		3.72	ug/L	1.0	74	70	130			
1,2-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
1,4-Dichlorobenzene		4.96	ug/L	1.0	99	70	130			
Dichlorodifluoromethane		4.92	ug/L	1.0	98	70	130			
1,1-Dichloroethane		5.40	ug/L	1.0	108	70	130			
1,2-Dichloroethane		4.60	ug/L	1.0	92	70	130			
1,1-Dichloroethene		5.24	ug/L	1.0	105	80	120			
cis-1,2-Dichloroethene		5.48	ug/L	1.0	110	70	130			
trans-1,2-Dichloroethene		5.40	ug/L	1.0	108	70	130			
1,2-Dichloropropane		4.16	ug/L	1.0	83	80	120			
cis-1,3-Dichloropropene		4.28	ug/L	1.0	86	70	130			
trans-1,3-Dichloropropene		4.52	ug/L	1.0	90	70	130			
Ethylbenzene		4.76	ug/L	1.0	95	80	120			
2-Hexanone		52.0	ug/L	20	104	70	130			
Iodomethane		4.72	ug/L	1.0	94	70	130			
Methyl ethyl ketone		64.4	ug/L	20	129	70	130			
Methyl isobutyl ketone		42.4	ug/L	20	85	70	130			
Methylene chloride		5.24	ug/L	1.0	105	70	130			
Styrene		4.76	ug/L	1.0	95	70	130			
1,1,1,2-Tetrachloroethane		4.20	ug/L	1.0	84	70	130			
1,1,2,2-Tetrachloroethane		5.60	ug/L	1.0	112	70	130			
Tetrachloroethene		4.12	ug/L	1.0	82	70	130			
Toluene		4.12	ug/L	1.0	82	80	120			
1,1,1-Trichloroethane		5.44	ug/L	1.0	109	70	130			
1,1,2-Trichloroethane		4.00	ug/L	1.0	80	70	130			
Trichloroethene		3.90	ug/L	1.0	78	70	130			
Trichlorofluoromethane		5.08	ug/L	1.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R81885
Sample ID: CCV073112B										07/31/12 10:16
54 Continuing Calibration Verification Standard										
1,2,3-Trichloropropane		5.36	ug/L	1.0	107	70	130			
Vinyl acetate		6.36	ug/L	1.0	127	70	130			
Vinyl chloride		5.48	ug/L	1.0	110	80	120			
m+p-Xylenes		8.36	ug/L	1.0	84	70	130			
o-Xylene		4.36	ug/L	1.0	87	70	130			
Xylenes, Total		12.7	ug/L	1.0	85	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	69.7	142			
Surr: Dibromofluoromethane				1.0	91	69.9	128			
Surr: p-Bromofluorobenzene				1.0	98	83.7	119			
Surr: Toluene-d8				1.0	86	75.5	125			
Method: SW8260B										Batch: R81885
Sample ID: LCS073112A										07/31/12 10:54
54 Laboratory Control Sample										
Run: 1SATURN_120731A										
trans-1,4-Dichloro-2-butene		6.00	ug/L	1.0	120	70	123			
Acetone		64.8	ug/L	20	130	57.3	142			
Acrylonitrile		64.0	ug/L	20	128	73.2	133			
Benzene		3.84	ug/L	1.0	77	73.7	125			
Bromochloromethane		4.36	ug/L	1.0	87	64.6	125			
Bromodichloromethane		4.40	ug/L	1.0	88	70.9	126			
Bromoform		5.28	ug/L	1.0	106	68.7	120			
Bromomethane		4.68	ug/L	1.0	94	43.5	144			
Carbon disulfide		4.76	ug/L	1.0	95	62.5	149			
Carbon tetrachloride		4.52	ug/L	1.0	90	68.8	123			
Chlorobenzene		4.44	ug/L	1.0	89	78.3	121			
Chlorodibromomethane		4.76	ug/L	1.0	95	69.7	118			
Chloroethane		5.24	ug/L	1.0	105	49.1	152			
Chloroform		4.72	ug/L	1.0	94	67.6	124			
Chloromethane		3.62	ug/L	1.0	72	67.9	134			
1,2-Dibromo-3-chloropropane		5.28	ug/L	1.0	106	58.2	138			
1,2-Dibromoethane		4.60	ug/L	1.0	92	70.6	114			
Dibromomethane		3.71	ug/L	1.0	74	64.2	126			
1,2-Dichlorobenzene		4.68	ug/L	1.0	94	78	125			
1,4-Dichlorobenzene		4.40	ug/L	1.0	88	78.1	117			
Dichlorodifluoromethane		4.72	ug/L	1.0	94	65.6	148			
1,1-Dichloroethane		4.84	ug/L	1.0	97	73	130			
1,2-Dichloroethane		4.08	ug/L	1.0	82	71	137			
1,1-Dichloroethene		4.72	ug/L	1.0	94	59.3	137			
cis-1,2-Dichloroethene		4.96	ug/L	1.0	99	78.3	122			
trans-1,2-Dichloroethene		4.88	ug/L	1.0	98	69.3	128			
1,2-Dichloropropane		4.16	ug/L	1.0	83	72.3	140			
cis-1,3-Dichloropropene		4.36	ug/L	1.0	87	77	125			
trans-1,3-Dichloropropene		4.48	ug/L	1.0	90	74.7	123			
Ethylbenzene		4.96	ug/L	1.0	99	75.5	130			
2-Hexanone		52.8	ug/L	20	106	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81885
Sample ID: LCS073112A	54	Laboratory Control Sample				Run: 1SATURN_120731A				07/31/12 10:54
Iodomethane		3.33	ug/L	1.0	67	41.4	130			
Methyl ethyl ketone		63.2	ug/L	20	126	57.5	140			
Methyl isobutyl ketone		43.2	ug/L	20	86	72.7	124			
Methylene chloride		4.56	ug/L	1.0	91	63.1	131			
Styrene		4.68	ug/L	1.0	94	77.2	119			
1,1,1,2-Tetrachloroethane		4.40	ug/L	1.0	88	74	119			
1,1,2,2-Tetrachloroethane		5.36	ug/L	1.0	107	77.6	120			
Tetrachloroethene		4.20	ug/L	1.0	84	72.6	127			
Toluene		4.40	ug/L	1.0	88	65.3	130			
1,1,1-Trichloroethane		4.56	ug/L	1.0	91	72.2	121			
1,1,2-Trichloroethane		4.36	ug/L	1.0	87	74.7	128			
Trichloroethene		3.99	ug/L	1.0	80	69	129			
Trichlorofluoromethane		4.40	ug/L	1.0	88	54.8	141			
1,2,3-Trichloropropane		4.92	ug/L	1.0	98	62.5	131			
Vinyl acetate		6.60	ug/L	1.0	132	72.1	156			
Vinyl chloride		4.92	ug/L	1.0	98	77.7	132			
m+p-Xylenes		8.92	ug/L	1.0	89	76.4	125			
o-Xylene		4.80	ug/L	1.0	96	73.5	127			
Xylenes, Total		13.7	ug/L	1.0	91	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	89	69.7	142			
Surr: Dibromofluoromethane				1.0	80	69.9	128			
Surr: p-Bromofluorobenzene				1.0	96	83.7	119			
Surr: Toluene-d8				1.0	90	75.5	125			
Sample ID: MB073112A										07/31/12 13:03
54	Method Blank				Run: 1SATURN_120731A					
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 08/02/12
Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81885
Sample ID: MB073112A	54	Method Blank		Run: 1SATURN_120731A			07/31/12 13:03			
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	93	69.7	142			
Surr: Dibromofluoromethane				1.0	88	69.9	128			
Surr: p-Bromofluorobenzene				1.0	100	83.7	119			
Surr: Toluene-d8				1.0	89	75.5	125			
Sample ID: H12070478-001EMS	54	Sample Matrix Spike		Run: 1SATURN_120731A			07/31/12 19:42			
trans-1,4-Dichloro-2-butene		10.5	ug/L	1.0	105	70	123			
Acetone		117	ug/L	40	117	57.3	142			
Acrylonitrile		126	ug/L	40	126	73.2	133			
Benzene		8.00	ug/L	2.0	80	73.7	125			
Bromochloromethane		10.0	ug/L	2.0	100	64.6	125			
Bromodichloromethane		9.12	ug/L	2.0	91	70.9	126			
Bromoform		11.0	ug/L	2.0	110	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81885
Sample ID: H12070478-001EMS	54	Sample Matrix Spike			Run: 1SATURN_120731A					07/31/12 19:42
Bromomethane		10.2	ug/L	2.0	102	43.5	144			
Carbon disulfide		10.3	ug/L	2.0	103	62.5	149			
Carbon tetrachloride		10.1	ug/L	2.0	101	68.8	123			
Chlorobenzene		8.96	ug/L	2.0	90	78.3	121			
Chlorodibromomethane		9.52	ug/L	2.0	95	69.7	118			
Chloroethane		6.24	ug/L	2.0	62	49.1	152			
Chloroform		10.2	ug/L	2.0	102	67.6	124			
Chloromethane		9.68	ug/L	2.0	97	67.9	134			
1,2-Dibromo-3-chloropropane		12.6	ug/L	2.0	126	58.2	138			
1,2-Dibromoethane		9.92	ug/L	2.0	99	70.6	114			
Dibromomethane		8.48	ug/L	2.0	85	64.2	126			
1,2-Dichlorobenzene		9.12	ug/L	2.0	91	78	125			
1,4-Dichlorobenzene		9.92	ug/L	2.0	99	78.1	117			
Dichlorodifluoromethane		9.44	ug/L	2.0	94	65.6	148			
1,1-Dichloroethane		10.7	ug/L	2.0	107	73	130			
1,2-Dichloroethane		9.04	ug/L	2.0	90	71	137			
1,1-Dichloroethene		10.0	ug/L	2.0	100	59.3	137			
cis-1,2-Dichloroethene		11.3	ug/L	2.0	113	78.3	122			
trans-1,2-Dichloroethene		10.3	ug/L	2.0	103	69.3	128			
1,2-Dichloropropane		8.80	ug/L	2.0	88	72.3	140			
cis-1,3-Dichloropropene		9.04	ug/L	2.0	90	77	125			
trans-1,3-Dichloropropene		10.1	ug/L	2.0	101	74.7	123			
Ethylbenzene		10.2	ug/L	2.0	102	75.5	130			
2-Hexanone		115	ug/L	40	115	72.6	127			
Iodomethane		7.40	ug/L	2.0	74	41.4	130			
Methyl ethyl ketone		115	ug/L	40	115	57.5	140			
Methyl isobutyl ketone		100	ug/L	40	100	72.7	124			
Methylene chloride		9.84	ug/L	2.0	98	63.1	131			
Styrene		9.84	ug/L	2.0	98	77.2	119			
1,1,1,2-Tetrachloroethane		8.96	ug/L	2.0	90	74	119			
1,1,2,2-Tetrachloroethane		11.0	ug/L	2.0	110	77.6	120			
Tetrachloroethene		8.64	ug/L	2.0	82	72.6	127			
Toluene		8.80	ug/L	2.0	88	65.3	130			
1,1,1-Trichloroethane		9.92	ug/L	2.0	99	72.2	121			
1,1,2-Trichloroethane		9.84	ug/L	2.0	98	74.7	128			
Trichloroethene		8.08	ug/L	2.0	81	69	129			
Trichlorofluoromethane		9.04	ug/L	2.0	90	54.8	141			
1,2,3-Trichloropropane		8.64	ug/L	2.0	86	62.5	131			
Vinyl acetate		12.6	ug/L	2.0	126	72.1	156			
Vinyl chloride		10.1	ug/L	2.0	101	77.7	132			
m+p-Xylenes		18.2	ug/L	2.0	91	76.4	125			
o-Xylene		9.76	ug/L	2.0	98	73.5	127			
Xylenes, Total		27.9	ug/L	2.0	93	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	97	69.7	142			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81885
Sample ID: H12070478-001EMS	54	Sample Matrix Spike				Run: 1SATURN_120731A				07/31/12 19:42
Surr: Dibromofluoromethane				2.0	86	69.9	128			
Surr: p-Bromofluorobenzene				2.0	97	83.7	119			
Surr: Toluene-d8				2.0	86	75.5	125			
Sample ID: H12070478-001EMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_120731A				07/31/12 20:12
trans-1,4-Dichloro-2-butene		11.5	ug/L	1.0	115	70	123			
Acetone		108	ug/L	40	108	57.3	142	7.8	20	
Acrylonitrile		128	ug/L	40	128	73.2	133	1.9	20	
Benzene		7.78	ug/L	2.0	78	73.7	125	2.8	20	
Bromochloromethane		9.76	ug/L	2.0	98	64.6	125	2.4	20	
Bromodichloromethane		9.68	ug/L	2.0	97	70.9	126	6.0	20	
Bromoform		10.6	ug/L	2.0	106	68.7	120	3.7	20	
Bromomethane		10.4	ug/L	2.0	104	43.5	144	1.6	20	
Carbon disulfide		10.2	ug/L	2.0	102	62.5	149	0.8	20	
Carbon tetrachloride		10.2	ug/L	2.0	102	68.8	123	0.8	20	
Chlorobenzene		8.96	ug/L	2.0	90	78.3	121	0.0	20	
Chlorodibromomethane		9.12	ug/L	2.0	91	69.7	118	4.3	20	
Chloroethane		6.42	ug/L	2.0	64	49.1	152	2.8	20	
Chloroform		9.84	ug/L	2.0	98	67.6	124	4.0	20	
Chloromethane		9.20	ug/L	2.0	92	67.9	134	5.1	20	
1,2-Dibromo-3-chloropropane		11.4	ug/L	2.0	114	58.2	138	10	20	
1,2-Dibromoethane		9.92	ug/L	2.0	99	70.6	114	0.0	20	
Dibromomethane		8.64	ug/L	2.0	86	64.2	126	1.9	20	
1,2-Dichlorobenzene		9.28	ug/L	2.0	93	78	125	1.7	20	
1,4-Dichlorobenzene		9.20	ug/L	2.0	92	78.1	117	7.5	20	
Dichlorodifluoromethane		9.68	ug/L	2.0	97	65.6	148	2.5	20	
1,1-Dichloroethane		9.68	ug/L	2.0	97	73	130	10	20	
1,2-Dichloroethane		9.28	ug/L	2.0	93	71	137	2.6	20	
1,1-Dichloroethene		9.36	ug/L	2.0	94	59.3	137	6.6	20	
cis-1,2-Dichloroethene		9.92	ug/L	2.0	99	78.3	122	13	20	
trans-1,2-Dichloroethene		9.60	ug/L	2.0	96	69.3	128	7.2	20	
1,2-Dichloropropane		9.12	ug/L	2.0	91	72.3	140	3.6	20	
cis-1,3-Dichloropropene		9.52	ug/L	2.0	95	77	125	5.2	20	
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	74.7	123	1.6	20	
Ethylbenzene		10.5	ug/L	2.0	105	75.5	130	3.1	20	
2-Hexanone		115	ug/L	40	115	72.6	127	0.0	20	
Iodomethane		7.17	ug/L	2.0	72	41.4	130	3.2	20	
Methyl ethyl ketone		107	ug/L	40	107	57.5	140	7.2	20	
Methyl isobutyl ketone		99.2	ug/L	40	99	72.7	124	0.8	20	
Methylene chloride		9.60	ug/L	2.0	96	63.1	131	2.5	20	
Styrene		10.3	ug/L	2.0	103	77.2	119	4.8	20	
1,1,1,2-Tetrachloroethane		8.88	ug/L	2.0	89	74	119	0.9	20	
1,1,2,2-Tetrachloroethane		10.6	ug/L	2.0	106	77.6	120	3.7	20	
Tetrachloroethene		8.64	ug/L	2.0	82	72.6	127	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 08/02/12

Project: 1273 City of Helena Landfill

Work Order: H12070530

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R81885
Sample ID: H12070478-001EMSD	54	Sample Matrix Spike Duplicate			Run: 1SATURN_120731A					07/31/12 20:12
Toluene		9.68	ug/L	2.0	97	65.3	130	9.5	20	
1,1,1-Trichloroethane		9.76	ug/L	2.0	98	72.2	121	1.6	20	
1,1,2-Trichloroethane		9.52	ug/L	2.0	95	74.7	128	3.3	20	
Trichloroethene		8.16	ug/L	2.0	82	69	129	1.0	20	
Trichlorofluoromethane		9.28	ug/L	2.0	93	54.8	141	2.6	20	
1,2,3-Trichloropropane		8.72	ug/L	2.0	87	62.5	131	0.9	20	
Vinyl acetate		11.8	ug/L	2.0	118	72.1	156	5.9	20	
Vinyl chloride		10.1	ug/L	2.0	101	77.7	132	0.0	20	
m+p-Xylenes		18.4	ug/L	2.0	92	76.4	125	1.3	20	
o-Xylene		10.1	ug/L	2.0	101	73.5	127	3.2	20	
Xylenes, Total		28.5	ug/L	2.0	95	37.8	157	2.0	20	
Surr: 1,2-Dichloroethane-d4				2.0	90	69.7	142			
Surr: Dibromofluoromethane				2.0	87	69.9	128			
Surr: p-Bromofluorobenzene				2.0	100	83.7	119			
Surr: Toluene-d8				2.0	93	75.5	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Hydrometrics Inc

H12070530

Login completed by: Tracy L. Lorash
Reviewed by: BL2000\ablackburn
Reviewed Date: 8/2/2012

Date Received: 7/31/2012
Received by: elm
Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Container/Temp Blank temperature:	9.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:
None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

Page 12 of 12

Site	Sample Code	Date	Time	Bottles
Sprinkler	CHHL-1207-100	7/31/12	10:45	3/UF/HCI/VOC

Weather: Clear, sunny, 85°

GWES:

Site	Time	Hour	Flow	Totalizer
HL-99-3	10:55	718.6	Not reading	524770 341946
HL-99-2	11:00	1268.55	22.78	4443200 2007420
HL-99-1	11:05	1780.55	11.56	4079970 1384310

[Signature]

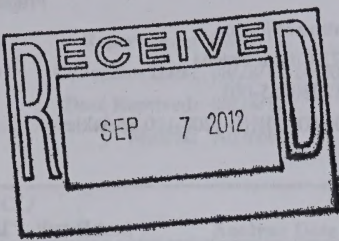
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HFORM-1 07/11

ANALYTICAL SUMMARY REPORT

September 05, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601



Workorder No.: H12080455

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 8/28/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12080455-001	CHHL-1208-100 Sprinkler	08/28/12 10:30	08/28/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This is a preliminary report that contains incomplete data or data that has not been fully validated. Caution should be exercised in the use of any data presented as final reported results may not reflect the values presented.

If you have any questions regarding these tests results, please call 406-442-0711 or 877-472-0711.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2012.09.06 13:04:36 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena

Lab ID: H12080455-001

Client Sample ID CHHL-1208-100 Sprinkler

Report Date: 09/05/12

Collection Date: 08/28/12 10:30

Date Received: 08/28/12

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	09/04/12 13:59 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	09/04/12 13:59 / abb
Benzene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Bromoform	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Chloroform	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
2-Hexanone	ND	ug/L		20		SW8260B	09/04/12 13:59 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	09/04/12 13:59 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	09/04/12 13:59 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Styrene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Tetrachloroethene	0.37	ug/L	J	0.50		SW8260B	09/04/12 13:59 / abb
Toluene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12080455-001

Report Date: 09/05/12
Collection Date: 08/28/12 10:30
Date Received: 08/28/12
Matrix: Aqueous

Client Sample ID CHHL-1208-100 Sprinkler

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	09/04/12 13:59 / abb
Surr: 1,2-Dichloroethane-d4	86.0	%REC		69.7-142		SW8260B	09/04/12 13:59 / abb
Surr: Dibromofluoromethane	80.0	%REC		69.9-128		SW8260B	09/04/12 13:59 / abb
Surr: p-Bromofluorobenzene	98.0	%REC		83.7-119		SW8260B	09/04/12 13:59 / abb
Surr: Toluene-d8	90.0	%REC		75.5-125		SW8260B	09/04/12 13:59 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena

Report Date: 09/05/12

Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R82706
Sample ID: CCV0907412C										09/04/12 11:11
54 Continuing Calibration Verification Standard										
trans-1,4-Dichloro-2-butene		5.68	ug/L	1.0	114	70	130			
Acetone		63.2	ug/L	20	126	70	130			
Acrylonitrile		63.2	ug/L	20	126	70	130			
Benzene		4.40	ug/L	1.0	88	70	130			
Bromochloromethane		4.76	ug/L	1.0	95	70	130			
Bromodichloromethane		5.08	ug/L	1.0	102	70	130			
Bromoform		5.04	ug/L	1.0	101	70	130			
Bromomethane		3.68	ug/L	1.0	74	70	130			
Carbon disulfide		4.56	ug/L	1.0	91	70	130			
Carbon tetrachloride		4.56	ug/L	1.0	91	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		4.40	ug/L	1.0	88	70	130			
Chloroethane		4.84	ug/L	1.0	97	70	130			
Chloroform		5.08	ug/L	1.0	102	80	120			
Chloromethane		5.76	ug/L	1.0	115	70	130			
1,2-Dibromo-3-chloropropane		4.88	ug/L	1.0	98	70	130			
1,2-Dibromoethane		4.80	ug/L	1.0	96	70	130			
Dibromomethane		4.68	ug/L	1.0	94	70	130			
1,2-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
1,4-Dichlorobenzene		4.68	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		4.96	ug/L	1.0	99	70	130			
1,1-Dichloroethane		4.64	ug/L	1.0	93	70	130			
1,2-Dichloroethane		4.20	ug/L	1.0	84	70	130			
1,1-Dichloroethene		4.32	ug/L	1.0	86	80	120			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
trans-1,2-Dichloroethene		4.40	ug/L	1.0	88	70	130			
1,2-Dichloropropane		5.00	ug/L	1.0	100	80	120			
cis-1,3-Dichloropropene		5.44	ug/L	1.0	109	70	130			
trans-1,3-Dichloropropene		5.40	ug/L	1.0	108	70	130			
Ethylbenzene		5.60	ug/L	1.0	112	80	120			
2-Hexanone		62.8	ug/L	20	126	70	130			
Iodomethane		4.36	ug/L	1.0	87	70	130			
Methyl ethyl ketone		64.4	ug/L	20	129	70	130			
Methyl isobutyl ketone		49.6	ug/L	20	99	70	130			
Methylene chloride		3.95	ug/L	1.0	79	70	130			
Styrene		5.12	ug/L	1.0	102	70	130			
1,1,1,2-Tetrachloroethane		4.80	ug/L	1.0	96	70	130			
1,1,1,2,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
Tetrachloroethene		5.36	ug/L	1.0	107	70	130			
Toluene		5.20	ug/L	1.0	104	80	120			
1,1,1-Trichloroethane		4.80	ug/L	1.0	96	70	130			
1,1,2-Trichloroethane		5.08	ug/L	1.0	102	70	130			
Trichloroethene		4.44	ug/L	1.0	89	70	130			
Trichlorofluoromethane		5.16	ug/L	1.0	103	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/05/12
Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R82706
Sample ID: CCV0907412C										09/04/12 11:11
54 Continuing Calibration Verification Standard										
1,2,3-Trichloropropane		4.20	ug/L	1.0	84	70	130			
Vinyl acetate		5.04	ug/L	1.0	101	70	130			
Vinyl chloride		5.36	ug/L	1.0	107	80	120			
m+p-Xylenes		9.48	ug/L	1.0	95	70	130			
o-Xylene		5.36	ug/L	1.0	107	70	130			
Xylenes, Total		14.8	ug/L	1.0	99	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	90	69.7	142			
Surr: Dibromofluoromethane				1.0	84	69.9	128			
Surr: p-Bromofluorobenzene				1.0	100	83.7	119			
Surr: Toluene-d8				1.0	106	75.5	125			

Method: SW8260B										Batch: R82706
Sample ID: LCS090412A										09/04/12 12:19
54 Laboratory Control Sample										
Run: 1SATURN_120904A										
trans-1,4-Dichloro-2-butene		4.08	ug/L	1.0	82	70	123			
Acetone		67.2	ug/L	20	134	57.3	142			
Acrylonitrile		64.8	ug/L	20	130	73.2	133			
Benzene		4.60	ug/L	1.0	92	73.7	125			
Bromochloromethane		4.88	ug/L	1.0	98	64.6	125			
Bromodichloromethane		5.16	ug/L	1.0	103	70.9	126			
Bromoform		5.08	ug/L	1.0	102	68.7	120			
Bromomethane		3.59	ug/L	1.0	72	43.5	144			
Carbon disulfide		6.12	ug/L	1.0	122	62.5	149			
Carbon tetrachloride		4.80	ug/L	1.0	96	68.8	123			
Chlorobenzene		4.64	ug/L	1.0	93	78.3	121			
Chlorodibromomethane		4.48	ug/L	1.0	90	69.7	118			
Chloroethane		4.36	ug/L	1.0	87	49.1	152			
Chloroform		5.16	ug/L	1.0	103	67.6	124			
Chloromethane		5.12	ug/L	1.0	102	67.9	134			
1,2-Dibromo-3-chloropropane		4.72	ug/L	1.0	94	58.2	138			
1,2-Dibromoethane		4.64	ug/L	1.0	93	70.6	114			
Dibromomethane		4.64	ug/L	1.0	93	64.2	126			
1,2-Dichlorobenzene		4.64	ug/L	1.0	93	78	125			
1,4-Dichlorobenzene		4.72	ug/L	1.0	94	78.1	117			
Dichlorodifluoromethane		4.84	ug/L	1.0	97	65.6	148			
1,1-Dichloroethane		5.12	ug/L	1.0	102	73	130			
1,2-Dichloroethane		4.64	ug/L	1.0	93	71	137			
1,1-Dichloroethene		4.88	ug/L	1.0	98	59.3	137			
cis-1,2-Dichloroethene		5.08	ug/L	1.0	102	78.3	122			
trans-1,2-Dichloroethene		4.96	ug/L	1.0	99	69.3	128			
1,2-Dichloropropane		4.80	ug/L	1.0	96	72.3	140			
cis-1,3-Dichloropropene		4.88	ug/L	1.0	98	77	125			
trans-1,3-Dichloropropene		5.04	ug/L	1.0	101	74.7	123			
Ethylbenzene		5.48	ug/L	1.0	110	75.5	130			
2-Hexanone		60.8	ug/L	20	122	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 09/05/12

Project: 1273 City of Helena

Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R82706
Sample ID: LCS090412A	54 Laboratory Control Sample					Run: 1SATURN_120904A			09/04/12 12:19	
Iodomethane		4.00	ug/L	1.0	80	41.4	130			
Methyl ethyl ketone		64.0	ug/L	20	128	57.5	140			
Methyl isobutyl ketone		48.4	ug/L	20	97	72.7	124			
Methylene chloride		4.40	ug/L	1.0	88	63.1	131			
Styrene		5.32	ug/L	1.0	106	77.2	119			
1,1,1,2-Tetrachloroethane		4.20	ug/L	1.0	84	74	119			
1,1,2,2-Tetrachloroethane		5.44	ug/L	1.0	109	77.6	120			
Tetrachloroethene		4.88	ug/L	1.0	98	72.6	127			
Toluene		5.20	ug/L	1.0	104	65.3	130			
1,1,1-Trichloroethane		4.92	ug/L	1.0	98	72.2	121			
1,1,2-Trichloroethane		4.56	ug/L	1.0	91	74.7	128			
Trichloroethene		4.48	ug/L	1.0	90	69	129			
Trichlorofluoromethane		4.44	ug/L	1.0	89	54.8	141			
1,2,3-Trichloropropane		5.20	ug/L	1.0	104	62.5	131			
Vinyl acetate		6.20	ug/L	1.0	124	72.1	156			
Vinyl chloride		4.88	ug/L	1.0	98	77.7	132			
m+p-Xylenes		10.2	ug/L	1.0	102	76.4	125			
o-Xylene		5.52	ug/L	1.0	110	73.5	127			
Xylenes, Total		15.7	ug/L	1.0	105	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	94	69.7	142			
Surr: Dibromofluoromethane				1.0	86	69.9	128			
Surr: p-Bromofluorobenzene				1.0	112	83.7	119			
Surr: Toluene-d8				1.0	99	75.5	125			
Sample ID: MB090412A										09/04/12 13:29
54 Method Blank					Run: 1SATURN_120904A					
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/05/12
Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R82706
Sample ID: MB090412A	54	Method Blank		Run: 1SATURN_120904A				09/04/12 13:29		
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	88	69.7	142			
Surr: Dibromofluoromethane				1.0	78	69.9	128			
Surr: p-Bromofluorobenzene				1.0	100	83.7	119			
Surr: Toluene-d8				1.0	92	75.5	125			
Sample ID: H12080455-001AMS	54	Sample Matrix Spike		Run: 1SATURN_120904A				09/04/12 19:22		
trans-1,4-Dichloro-2-butene		11.3	ug/L	1.0	113	70	123			
Acetone		94.4	ug/L	40	94	57.3	142			
Acrylonitrile		127	ug/L	40	127	73.2	133			
Benzene		8.16	ug/L	1.0	82	73.7	125			
Bromochloromethane		10.6	ug/L	1.0	106	64.6	125			
Bromodichloromethane		9.36	ug/L	1.0	94	70.9	126			
Bromoform		11.0	ug/L	1.0	110	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 09/05/12

Project: 1273 City of Helena

Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R82706
Sample ID: H12080455-001AMS 54 Sample Matrix Spike										Run: 1SATURN_120904A 09/04/12 19:22
Bromomethane		8.40	ug/L	1.0	84	43.5	144			
Carbon disulfide		12.2	ug/L	1.0	122	62.5	149			
Carbon tetrachloride		10.4	ug/L	1.0	104	68.8	123			
Chlorobenzene		9.84	ug/L	1.0	98	78.3	121			
Chlorodibromomethane		9.60	ug/L	1.0	96	69.7	118			
Chloroethane		5.90	ug/L	1.0	59	49.1	152			
Chloroform		11.3	ug/L	1.0	113	67.6	124			
Chloromethane		9.28	ug/L	1.0	93	67.9	134			
1,2-Dibromo-3-chloropropane		9.36	ug/L	1.0	94	58.2	138			
1,2-Dibromoethane		10.6	ug/L	1.0	106	70.6	114			
Dibromomethane		8.64	ug/L	1.0	86	64.2	126			
1,2-Dichlorobenzene		9.44	ug/L	1.0	94	78	125			
1,4-Dichlorobenzene		9.76	ug/L	1.0	98	78.1	117			
Dichlorodifluoromethane		9.04	ug/L	1.0	90	65.6	148			
1,1-Dichloroethane		10.2	ug/L	1.0	102	73	130			
1,2-Dichloroethane		9.20	ug/L	1.0	92	71	137			
1,1-Dichloroethene		9.36	ug/L	1.0	94	59.3	137			
cis-1,2-Dichloroethene		10.6	ug/L	1.0	106	78.3	122			
trans-1,2-Dichloroethene		10.1	ug/L	1.0	101	69.3	128			
1,2-Dichloropropane		8.88	ug/L	1.0	89	72.3	140			
cis-1,3-Dichloropropene		9.68	ug/L	1.0	97	77	125			
trans-1,3-Dichloropropene		10.4	ug/L	1.0	104	74.7	123			
Ethylbenzene		11.7	ug/L	1.0	117	75.5	130			
2-Hexanone		110	ug/L	40	110	72.6	127			
Iodomethane		7.78	ug/L	1.0	78	41.4	130			
Methyl ethyl ketone		105	ug/L	40	105	57.5	140			
Methyl isobutyl ketone		95.2	ug/L	40	95	72.7	124			
Methylene chloride		8.88	ug/L	1.0	89	63.1	131			
Styrene		10.3	ug/L	1.0	103	77.2	119			
1,1,1,2-Tetrachloroethane		9.44	ug/L	1.0	94	74	119			
1,1,2,2-Tetrachloroethane		11.0	ug/L	1.0	110	77.6	120			
Tetrachloroethene		9.76	ug/L	1.0	94	72.6	127			
Toluene		9.44	ug/L	1.0	94	65.3	130			
1,1,1-Trichloroethane		10.4	ug/L	1.0	104	72.2	121			
1,1,2-Trichloroethane		10.4	ug/L	1.0	104	74.7	128			
Trichloroethene		8.56	ug/L	1.0	86	69	129			
Trichlorofluoromethane		8.16	ug/L	1.0	82	54.8	141			
1,2,3-Trichloropropane		9.04	ug/L	1.0	90	62.5	131			
Vinyl acetate		12.8	ug/L	1.0	128	72.1	156			
Vinyl chloride		9.76	ug/L	1.0	98	77.7	132			
m+p-Xylenes		20.1	ug/L	1.0	100	76.4	125			
o-Xylene		10.2	ug/L	1.0	102	73.5	127			
Xylenes, Total		30.3	ug/L	2.0	101	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	91	69.7	142			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/05/12
Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R82706
Sample ID: H12080455-001AMS 54 Sample Matrix Spike										Run: 1SATURN_120904A 09/04/12 19:22
Surr: Dibromofluoromethane				2.0	89	69.9	128			
Surr: p-Bromofluorobenzene				2.0	110	83.7	119			
Surr: Toluene-d8				2.0	94	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H12080455-001AMS 54 Sample Matrix Spike Duplicate										Run: 1SATURN_120904A 09/04/12 19:53
trans-1,4-Dichloro-2-butene		11.0	ug/L	1.0	110	70	123	2.2		20
Acetone		96.8	ug/L	40	97	57.3	142	2.5		20
Acrylonitrile		121	ug/L	40	121	73.2	133	5.2		20
Benzene		8.64	ug/L	1.0	86	73.7	125	5.7		20
Bromochloromethane		10.7	ug/L	1.0	107	64.6	125	1.5		20
Bromodichloromethane		10.3	ug/L	1.0	103	70.9	126	9.8		20
Bromoform		10.9	ug/L	1.0	109	68.7	120	0.7		20
Bromomethane		8.88	ug/L	1.0	89	43.5	144	5.6		20
Carbon disulfide		12.3	ug/L	1.0	123	62.5	149	1.3		20
Carbon tetrachloride		10.2	ug/L	1.0	102	68.8	123	2.3		20
Chlorobenzene		10.0	ug/L	1.0	100	78.3	121	1.6		20
Chlorodibromomethane		9.60	ug/L	1.0	96	69.7	118	0.0		20
Chloroethane		6.34	ug/L	1.0	63	49.1	152	7.2		20
Chloroform		11.0	ug/L	1.0	110	67.6	124	2.2		20
Chloromethane		8.88	ug/L	1.0	89	67.9	134	4.4		20
1,2-Dibromo-3-chloropropane		9.76	ug/L	1.0	98	58.2	138	4.2		20
1,2-Dibromoethane		9.84	ug/L	1.0	98	70.6	114	7.1		20
Dibromomethane		9.28	ug/L	1.0	93	64.2	126	7.1		20
1,2-Dichlorobenzene		9.12	ug/L	1.0	91	78	125	3.4		20
1,4-Dichlorobenzene		9.84	ug/L	1.0	98	78.1	117	0.8		20
Dichlorodifluoromethane		9.28	ug/L	1.0	93	65.6	148	2.6		20
1,1-Dichloroethane		10.6	ug/L	1.0	106	73	130	3.9		20
1,2-Dichloroethane		9.28	ug/L	1.0	93	71	137	0.9		20
1,1-Dichloroethene		9.60	ug/L	1.0	96	59.3	137	2.5		20
cis-1,2-Dichloroethene		11.0	ug/L	1.0	110	78.3	122	3.7		20
trans-1,2-Dichloroethene		10.3	ug/L	1.0	103	69.3	128	2.4		20
1,2-Dichloropropane		10.1	ug/L	1.0	101	72.3	140	13		20
cis-1,3-Dichloropropene		11.2	ug/L	1.0	112	77	125	15		20
trans-1,3-Dichloropropene		10.8	ug/L	1.0	108	74.7	123	3.8		20
Ethylbenzene		11.6	ug/L	1.0	116	75.5	130	0.7		20
2-Hexanone		107	ug/L	40	107	72.6	127	2.2		20
Iodomethane		7.68	ug/L	1.0	77	41.4	130	1.2		20
Methyl ethyl ketone		111	ug/L	40	111	57.5	140	5.9		20
Methyl isobutyl ketone		107	ug/L	40	107	72.7	124	12		20
Methylene chloride		8.80	ug/L	1.0	88	63.1	131	0.9		20
Styrene		11.0	ug/L	1.0	110	77.2	119	6.0		20
1,1,1,2-Tetrachloroethane		8.96	ug/L	1.0	90	74	119	5.2		20
1,1,2,2-Tetrachloroethane		10.9	ug/L	1.0	109	77.6	120	1.5		20
Tetrachloroethene		10.0	ug/L	1.0	96	72.6	127	2.4		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/05/12
Work Order: H12080455

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R82706
Sample ID: H12080455-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_120904A 09/04/12 19:53
Toluene		10.0	ug/L	1.0	100	65.3	130	5.8	20	
1,1,1-Trichloroethane		10.5	ug/L	1.0	105	72.2	121	0.8	20	
1,1,2-Trichloroethane		10.7	ug/L	1.0	107	74.7	128	3.0	20	
Trichloroethene		9.28	ug/L	1.0	93	69	129	8.1	20	
Trichlorofluoromethane		8.88	ug/L	1.0	89	54.8	141	8.5	20	
1,2,3-Trichloropropane		8.24	ug/L	1.0	82	62.5	131	9.3	20	
Vinyl acetate		12.2	ug/L	1.0	122	72.1	156	5.1	20	
Vinyl chloride		9.52	ug/L	1.0	95	77.7	132	2.5	20	
m+p-Xylenes		20.6	ug/L	1.0	103	76.4	125	2.4	20	
o-Xylene		11.2	ug/L	1.0	112	73.5	127	9.0	20	
Xylenes, Total		31.8	ug/L	2.0	106	37.8	157	4.6	20	
Surr: 1,2-Dichloroethane-d4				2.0	93	69.7	142			
Surr: Dibromofluoromethane				2.0	88	69.9	128			
Surr: p-Bromofluorobenzene				2.0	103	83.7	119			
Surr: Toluene-d8				2.0	103	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Hydrometrics Inc

H12080455

Login completed by: Wanda Johnson

Date Received: 8/28/2012

Reviewed by: BL2000\ablackburn

Received by: elm

Reviewed Date: 8/30/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☒	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Temp Blank received?	Yes ☐	No ☒	Not Applicable ☐
Container/Temp Blank temperature:	4.4 °C From Field/No Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

150

NOV 2

Koe-Hyatt Sea Log List
Ooms will discuss limit

Site	Sample Code	Date	Time	Bottles
Sprinkler	CHHL-1208-100	8/28/12	1030	2/UF/Ho/Voc

Weather: clear, sunny, 70°

GWES:

Site	Time	Hour	Flow	Totalizer
HL-99-1	10:00	2451.4	11.83	4557140 4715810
HL-99-2	10:05	1939.5	20.18	5202650 2766480
HL-99-3	10:10	1389.7	0	652677 -flowmeter stuck 341946

[Signature]

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

[illegible]

Return results & electronic copy to:
QA / QC Dept. at address at top of page

Split Samples:

☐ Accepted ☐ Declined

Signature _____



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ANALYTICAL SUMMARY REPORT

October 04, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H12090453

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 9/27/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12090453-001	CHHL-1209-100	09/26/12 15:00	09/27/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2012.10.04 13:54:23 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12090453-001
Client Sample ID CHHL-1209-100

Report Date: 10/04/12
Collection Date: 09/26/12 15:00
Date Received: 09/27/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/03/12 20:12 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/03/12 20:12 / abb
Benzene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Chloroform	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/03/12 20:12 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/03/12 20:12 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/03/12 20:12 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Styrene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Tetrachloroethene	0.29	ug/L	J	0.50		SW8260B	10/03/12 20:12 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

Definitions: QCL - Quality control limit.

ND - Not detected at the reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12090453-001
Client Sample ID: CHHL-1209-100

Report Date: 10/04/12
Collection Date: 09/26/12 15:00
Date Received: 09/27/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/03/12 20:12 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		69.7-142		SW8260B	10/03/12 20:12 / abb
Surr: Dibromofluoromethane	96.0	%REC		69.9-128		SW8260B	10/03/12 20:12 / abb
Surr: p-Bromofluorobenzene	92.0	%REC		83.7-119		SW8260B	10/03/12 20:12 / abb
Surr: Toluene-d8	83.0	%REC		75.5-125		SW8260B	10/03/12 20:12 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R83416
Sample ID: CCV100312D										10/03/12 15:42
54 Continuing Calibration Verification Standard										
trans-1,4-Dichloro-2-butene		4.88	ug/L	1.0	98	70	130			
Acetone		60.4	ug/L	20	121	70	130			
Acrylonitrile		45.2	ug/L	20	90	70	130			
Benzene		5.48	ug/L	1.0	110	70	130			
Bromochloromethane		4.80	ug/L	1.0	96	70	130			
Bromodichloromethane		4.24	ug/L	1.0	85	70	130			
Bromoform		5.04	ug/L	1.0	101	70	130			
Bromomethane		4.36	ug/L	1.0	87	70	130			
Carbon disulfide		4.76	ug/L	1.0	95	70	130			
Carbon tetrachloride		4.40	ug/L	1.0	88	70	130			
Chlorobenzene		4.88	ug/L	1.0	98	70	130			
Chlorodibromomethane		5.08	ug/L	1.0	102	70	130			
Chloroethane		5.92	ug/L	1.0	118	70	130			
Chloroform		4.92	ug/L	1.0	98	80	120			
Chloromethane		4.68	ug/L	1.0	94	70	130			
1,2-Dibromo-3-chloropropane		5.08	ug/L	1.0	102	70	130			
1,2-Dibromoethane		4.64	ug/L	1.0	93	70	130			
Dibromomethane		4.64	ug/L	1.0	93	70	130			
1,2-Dichlorobenzene		4.92	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
Dichlorodifluoromethane		4.88	ug/L	1.0	98	70	130			
1,1-Dichloroethane		4.40	ug/L	1.0	88	70	130			
1,2-Dichloroethane		4.60	ug/L	1.0	92	70	130			
1,1-Dichloroethene		4.88	ug/L	1.0	98	80	120			
cis-1,2-Dichloroethene		4.36	ug/L	1.0	87	70	130			
trans-1,2-Dichloroethene		4.92	ug/L	1.0	98	70	130			
1,2-Dichloropropane		4.32	ug/L	1.0	86	80	120			
cis-1,3-Dichloropropene		4.52	ug/L	1.0	90	70	130			
trans-1,3-Dichloropropene		4.92	ug/L	1.0	98	70	130			
Ethylbenzene		4.40	ug/L	1.0	88	80	120			
2-Hexanone		49.6	ug/L	20	99	70	130			
Iodomethane		4.88	ug/L	1.0	98	70	130			
Methyl ethyl ketone		52.4	ug/L	20	105	70	130			
Methyl isobutyl ketone		48.4	ug/L	20	97	70	130			
Methylene chloride		4.64	ug/L	1.0	93	70	130			
Styrene		5.00	ug/L	1.0	100	70	130			
1,1,1,2-Tetrachloroethane		4.76	ug/L	1.0	95	70	130			
1,1,2,2-Tetrachloroethane		4.56	ug/L	1.0	91	70	130			
Tetrachloroethene		4.60	ug/L	1.0	92	70	130			
Toluene		4.24	ug/L	1.0	85	80	120			
1,1,1-Trichloroethane		4.68	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		5.08	ug/L	1.0	102	70	130			
Trichloroethene		4.64	ug/L	1.0	93	70	130			
Trichlorofluoromethane		4.84	ug/L	1.0	97	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R83416
Sample ID: CCV100312D	54	Continuing Calibration Verification Standard								10/03/12 15:42
1,2,3-Trichloropropane		5.64	ug/L	1.0	113	70	130			
Vinyl acetate		4.56	ug/L	1.0	91	70	130			
Vinyl chloride		4.84	ug/L	1.0	97	80	120			
m+p-Xylenes		8.56	ug/L	1.0	86	70	130			
o-Xylene		4.72	ug/L	1.0	94	70	130			
Xylenes, Total		13.3	ug/L	1.0	89	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	100	69.7	142			
Surr: Dibromofluoromethane				1.0	97	69.9	128			
Surr: p-Bromofluorobenzene				1.0	106	83.7	119			
Surr: Toluene-d8				1.0	89	75.5	125			

Method: SW8260B										Batch: R83416
Sample ID: LCS100312C	54	Laboratory Control Sample				Run: 1SATURN_121003A				10/03/12 16:19
trans-1,4-Dichloro-2-butene		4.80	ug/L	1.0	96	70	123			
Acetone		49.2	ug/L	20	98	57.3	142			
Acrylonitrile		45.6	ug/L	20	91	73.2	133			
Benzene		5.88	ug/L	1.0	118	73.7	125			
Bromochloromethane		4.76	ug/L	1.0	95	64.6	125			
Bromodichloromethane		4.40	ug/L	1.0	88	70.9	126			
Bromoforn		4.84	ug/L	1.0	97	68.7	120			
Bromomethane		3.83	ug/L	1.0	77	43.5	144			
Carbon disulfide		5.08	ug/L	1.0	102	62.5	149			
Carbon tetrachloride		4.68	ug/L	1.0	94	68.8	123			
Chlorobenzene		4.68	ug/L	1.0	94	78.3	121			
Chlorodibromomethane		4.56	ug/L	1.0	91	69.7	118			
Chloroethane		6.24	ug/L	1.0	125	49.1	152			
Chloroform		5.04	ug/L	1.0	101	67.6	124			
Chloromethane		4.32	ug/L	1.0	86	67.9	134			
1,2-Dibromo-3-chloropropane		5.96	ug/L	1.0	119	58.2	138			
1,2-Dibromoethane		4.28	ug/L	1.0	86	70.6	114			
Dibromomethane		4.76	ug/L	1.0	95	64.2	126			
1,2-Dichlorobenzene		5.08	ug/L	1.0	102	78	125			
1,4-Dichlorobenzene		5.08	ug/L	1.0	102	78.1	117			
Dichlorodifluoromethane		5.08	ug/L	1.0	102	65.6	148			
1,1-Dichloroethane		4.52	ug/L	1.0	90	73	130			
1,2-Dichloroethane		4.56	ug/L	1.0	91	71	137			
1,1-Dichloroethene		5.00	ug/L	1.0	100	59.3	137			
cis-1,2-Dichloroethene		4.40	ug/L	1.0	88	78.3	122			
trans-1,2-Dichloroethene		4.88	ug/L	1.0	98	69.3	128			
1,2-Dichloropropane		4.68	ug/L	1.0	94	72.3	140			
cis-1,3-Dichloropropene		4.72	ug/L	1.0	94	77	125			
trans-1,3-Dichloropropene		4.72	ug/L	1.0	94	74.7	123			
Ethylbenzene		4.20	ug/L	1.0	84	75.5	130			
2-Hexanone		43.6	ug/L	20	87	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83416
Sample ID: LCS100312C	54	Laboratory Control Sample				Run: 1SATURN_121003A				10/03/12 16:19
Iodomethane		3.90	ug/L	1.0	78	41.4	130			
Methyl ethyl ketone		50.0	ug/L	20	100	57.5	140			
Methyl isobutyl ketone		48.0	ug/L	20	96	72.7	124			
Methylene chloride		4.92	ug/L	1.0	98	63.1	131			
Styrene		4.64	ug/L	1.0	93	77.2	119			
1,1,1,2-Tetrachloroethane		5.00	ug/L	1.0	100	74	119			
1,1,2,2-Tetrachloroethane		4.84	ug/L	1.0	97	77.6	120			
Tetrachloroethene		4.48	ug/L	1.0	90	72.6	127			
Toluene		4.20	ug/L	1.0	84	65.3	130			
1,1,1-Trichloroethane		4.80	ug/L	1.0	96	72.2	121			
1,1,2-Trichloroethane		4.84	ug/L	1.0	97	74.7	128			
Trichloroethene		4.88	ug/L	1.0	98	69	129			
Trichlorofluoromethane		4.40	ug/L	1.0	88	54.8	141			
1,2,3-Trichloropropane		5.64	ug/L	1.0	113	62.5	131			
Vinyl acetate		6.76	ug/L	1.0	135	72.1	156			
Vinyl chloride		4.40	ug/L	1.0	88	77.7	132			
m+p-Xylenes		8.40	ug/L	1.0	84	76.4	125			
o-Xylene		4.48	ug/L	1.0	90	73.5	127			
Xylenes, Total		12.9	ug/L	1.0	86	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	101	69.7	142			
Surr: Dibromofluoromethane				1.0	102	69.9	128			
Surr: p-Bromofluorobenzene				1.0	97	83.7	119			
Surr: Toluene-d8				1.0	89	75.5	125			
Sample ID: MB100312B	54	Method Blank				Run: 1SATURN_121003A				10/03/12 17:39
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83416
Sample ID: MB100312B	54	Method Blank		Run: 1SATURN_121003A			10/03/12 17:39			
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	95	69.7	142			
Surr: Dibromofluoromethane				1.0	99	69.9	128			
Surr: p-Bromofluorobenzene				1.0	95	83.7	119			
Surr: Toluene-d8				1.0	81	75.5	125			
Sample ID: H12090453-001AMS	54	Sample Matrix Spike		Run: 1SATURN_121003A			10/04/12 01:46			
trans-1,4-Dichloro-2-butene		9.44	ug/L	1.0	94	70	123			
Acetone		115	ug/L	40	115	57.3	142			
Acrylonitrile		96.8	ug/L	40	97	73.2	133			
Benzene		12.2	ug/L	1.0	122	73.7	125			
Bromochloromethane		10.0	ug/L	1.0	100	64.6	125			
Bromodichloromethane		8.88	ug/L	1.0	89	70.9	126			
Bromoform		10.1	ug/L	1.0	101	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83416
Sample ID: H12090453-001AMS	54	Sample Matrix Spike		Run: 1SATURN_121003A				10/04/12 01:46		
Bromomethane		6.58	ug/L	1.0	66	43.5	144			
Carbon disulfide		11.1	ug/L	1.0	111	62.5	149			
Carbon tetrachloride		9.52	ug/L	1.0	95	68.8	123			
Chlorobenzene		9.28	ug/L	1.0	93	78.3	121			
Chlorodibromomethane		10.1	ug/L	1.0	101	69.7	118			
Chloroethane		12.6	ug/L	1.0	126	49.1	152			
Chloroform		10.4	ug/L	1.0	104	67.6	124			
Chloromethane		8.00	ug/L	1.0	80	67.9	134			
1,2-Dibromo-3-chloropropane		10.6	ug/L	1.0	106	58.2	138			
1,2-Dibromoethane		9.36	ug/L	1.0	94	70.6	114			
Dibromomethane		10.0	ug/L	1.0	100	64.2	126			
1,2-Dichlorobenzene		10.1	ug/L	1.0	101	78	125			
1,4-Dichlorobenzene		10.0	ug/L	1.0	100	78.1	117			
Dichlorodifluoromethane		10.1	ug/L	1.0	101	65.6	148			
1,1-Dichloroethane		9.36	ug/L	1.0	94	73	130			
1,2-Dichloroethane		10.6	ug/L	1.0	106	71	137			
1,1-Dichloroethene		10.1	ug/L	1.0	101	59.3	137			
cis-1,2-Dichloroethene		9.44	ug/L	1.0	94	78.3	122			
trans-1,2-Dichloroethene		10.3	ug/L	1.0	103	69.3	128			
1,2-Dichloropropane		8.88	ug/L	1.0	89	72.3	140			
cis-1,3-Dichloropropene		9.60	ug/L	1.0	96	77	125			
trans-1,3-Dichloropropene		9.76	ug/L	1.0	98	74.7	123			
Ethylbenzene		8.96	ug/L	1.0	90	75.5	130			
2-Hexanone		102	ug/L	40	102	72.6	127			
Iodomethane		8.08	ug/L	1.0	81	41.4	130			
Methyl ethyl ketone		114	ug/L	40	114	57.5	140			
Methyl isobutyl ketone		93.6	ug/L	40	94	72.7	124			
Methylene chloride		10.0	ug/L	1.0	100	63.1	131			
Styrene		9.68	ug/L	1.0	97	77.2	119			
1,1,1,2-Tetrachloroethane		9.60	ug/L	1.0	96	74	119			
1,1,2,2-Tetrachloroethane		9.60	ug/L	1.0	96	77.6	120			
Tetrachloroethene		9.92	ug/L	1.0	99	72.6	127			
Toluene		9.04	ug/L	1.0	90	65.3	130			
1,1,1-Trichloroethane		9.68	ug/L	1.0	97	72.2	121			
1,1,2-Trichloroethane		10.2	ug/L	1.0	102	74.7	128			
Trichloroethene		9.60	ug/L	1.0	96	69	129			
Trichlorofluoromethane		8.80	ug/L	1.0	88	54.8	141			
1,2,3-Trichloropropane		11.0	ug/L	1.0	110	62.5	131			
Vinyl acetate		14.0	ug/L	1.0	140	72.1	156			
Vinyl chloride		8.96	ug/L	1.0	90	77.7	132			
m+p-Xylenes		18.1	ug/L	1.0	90	76.4	125			
o-Xylene		9.44	ug/L	1.0	94	73.5	127			
Xylenes, Total		27.4	ug/L	2.0	91	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	106	69.7	142			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83416
Sample ID: H12090453-001AMS		54 Sample Matrix Spike		Run: 1SATURN_121003A				10/04/12 01:46		
Surr: Dibromofluoromethane				2.0	102	69.9	128			
Surr: p-Bromofluorobenzene				2.0	95	83.7	119			
Surr: Toluene-d8				2.0	93	75.5	125			
Sample ID: H12090453-001AMSD		54 Sample Matrix Spike Duplicate		Run: 1SATURN_121003A				10/04/12 02:17		
trans-1,4-Dichloro-2-butene		9.28	ug/L	1.0	93	70	123	1.7	20	
Acetone		118	ug/L	40	118	57.3	142	2.7	20	
Acrylonitrile		110	ug/L	40	110	73.2	133	12	20	
Benzene		12.5	ug/L	1.0	125	73.7	125	2.6	20	
Bromochloromethane		9.84	ug/L	1.0	98	64.6	125	1.6	20	
Bromodichloromethane		8.80	ug/L	1.0	88	70.9	126	0.9	20	
Bromoform		10.4	ug/L	1.0	104	68.7	120	3.1	20	
Bromomethane		7.23	ug/L	1.0	72	43.5	144	9.5	20	
Carbon disulfide		10.6	ug/L	1.0	106	62.5	149	5.2	20	
Carbon tetrachloride		9.36	ug/L	1.0	94	68.8	123	1.7	20	
Chlorobenzene		9.28	ug/L	1.0	93	78.3	121	0.0	20	
Chlorodibromomethane		10.2	ug/L	1.0	102	69.7	118	0.8	20	
Chloroethane		12.5	ug/L	1.0	125	49.1	152	1.3	20	
Chloroform		10.7	ug/L	1.0	107	67.6	124	3.0	20	
Chloromethane		8.64	ug/L	1.0	86	67.9	134	7.7	20	
1,2-Dibromo-3-chloropropane		12.2	ug/L	1.0	122	58.2	138	15	20	
1,2-Dibromoethane		9.04	ug/L	1.0	90	70.6	114	3.5	20	
Dibromomethane		9.60	ug/L	1.0	96	64.2	126	4.1	20	
1,2-Dichlorobenzene		10.6	ug/L	1.0	106	78	125	5.4	20	
1,4-Dichlorobenzene		10.2	ug/L	1.0	102	78.1	117	2.4	20	
Dichlorodifluoromethane		10.2	ug/L	1.0	102	65.6	148	1.6	20	
1,1-Dichloroethane		9.36	ug/L	1.0	94	73	130	0.0	20	
1,2-Dichloroethane		9.92	ug/L	1.0	99	71	137	6.2	20	
1,1-Dichloroethene		10.7	ug/L	1.0	107	59.3	137	6.2	20	
cis-1,2-Dichloroethene		9.68	ug/L	1.0	97	78.3	122	2.5	20	
trans-1,2-Dichloroethene		10.3	ug/L	1.0	103	69.3	128	0.0	20	
1,2-Dichloropropane		8.80	ug/L	1.0	88	72.3	140	0.9	20	
cis-1,3-Dichloropropene		9.60	ug/L	1.0	96	77	125	0.0	20	
trans-1,3-Dichloropropene		9.76	ug/L	1.0	98	74.7	123	0.0	20	
Ethylbenzene		9.04	ug/L	1.0	90	75.5	130	0.9	20	
2-Hexanone		96.8	ug/L	40	97	72.6	127	4.8	20	
Iodomethane		8.08	ug/L	1.0	81	41.4	130	0.0	20	
Methyl ethyl ketone		102	ug/L	40	102	57.5	140	11	20	
Methyl isobutyl ketone		97.6	ug/L	40	98	72.7	124	4.2	20	
Methylene chloride		9.76	ug/L	1.0	98	63.1	131	2.4	20	
Styrene		9.28	ug/L	1.0	93	77.2	119	4.2	20	
1,1,1,2-Tetrachloroethane		10.5	ug/L	1.0	105	74	119	8.8	20	
1,1,2,2-Tetrachloroethane		10.4	ug/L	1.0	104	77.6	120	8.0	20	
Tetrachloroethene		9.92	ug/L	1.0	99	72.6	127	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/04/12
Work Order: H12090453

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83416
Sample ID: H12090453-001AMSD	54	Sample Matrix Spike Duplicate			Run: 1SATURN_121003A			10/04/12 02:17		
Toluene		9.44	ug/L	1.0	94	65.3	130	4.3	20	
1,1,1-Trichloroethane		10.0	ug/L	1.0	100	72.2	121	3.3	20	
1,1,2-Trichloroethane		9.76	ug/L	1.0	98	74.7	128	4.0	20	
Trichloroethane		9.60	ug/L	1.0	96	69	129	0.0	20	
Trichlorofluoromethane		8.96	ug/L	1.0	90	54.8	141	1.8	20	
1,2,3-Trichloropropane		9.84	ug/L	1.0	98	62.5	131	11	20	
Vinyl acetate		13.5	ug/L	1.0	135	72.1	156	3.5	20	
Vinyl chloride		9.44	ug/L	1.0	94	77.7	132	5.2	20	
m+p-Xylenes		17.8	ug/L	1.0	89	76.4	125	1.3	20	
o-Xylene		9.44	ug/L	1.0	94	73.5	127	0.0	20	
Xylenes, Total		27.4	ug/L	2.0	91	37.8	157	0.3	20	
Surr: 1,2-Dichloroethane-d4				2.0	102	69.7	142			
Surr: Dibromofluoromethane				2.0	107	69.9	128			
Surr: p-Bromofluorobenzene				2.0	99	83.7	119			
Surr: Toluene-d8				2.0	95	75.5	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Hydrometrics Inc

H12090453

Login completed by: Tracy L. Lorash

Date Received: 9/27/2012

Reviewed by: BL2000\blackburn

Received by: TLL

Reviewed Date: 10/4/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Temp Blank received?	Yes ☐	No ☒	Not Applicable ☐
Container/Temp Blank temperature:	2.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

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<u>Site</u>	<u>Sample Code #</u>	<u>Date</u>	<u>Time</u>	<u>Bottles</u>
Sprinklen	C14HL- 1209- 100	9/26/12	1500	3 1/2 F/H/L/VOC

weather?

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<u>Site</u>	<u>Time</u>	<u>Hour</u>	<u>Flow</u>	<u>Totalizer</u>
HL-99-1		3152.4	12.11	506443 465508
HL-99-2		2640.9	19.72.	605279 361547
HL-99-3	1520	2091.0	Ø	652677 341948



Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

[illegible]



ANALYTICAL SUMMARY REPORT

October 23, 2012

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H12100280

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 10/16/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H12100280-001	CHHL-1210-100	10/16/12 10:25	10/16/12	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2012.10.23 14:04:57 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12100280-001
Client Sample ID CHHL-1210-100

Report Date: 10/23/12
Collection Date: 10/16/12 10:25
Date Received: 10/16/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/22/12 19:29 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/22/12 19:29 / abb
Benzene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Chloroform	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/22/12 19:29 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/22/12 19:29 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/22/12 19:29 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Styrene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H12100280-001
Client Sample ID CHHL-1210-100

Report Date: 10/23/12
Collection Date: 10/16/12 10:25
Date Received: 10/16/12
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/22/12 19:29 / abb
Surr: 1,2-Dichloroethane-d4	90.0	%REC		69.7-142		SW8260B	10/22/12 19:29 / abb
Surr: Dibromofluoromethane	97.0	%REC		69.9-128		SW8260B	10/22/12 19:29 / abb
Surr: p-Bromofluorobenzene	98.0	%REC		83.7-119		SW8260B	10/22/12 19:29 / abb
Surr: Toluene-d8	94.0	%REC		75.5-125		SW8260B	10/22/12 19:29 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R83853
Sample ID: CCV102212A										10/22/12 09:38
54 Continuing Calibration Verification Standard										
trans-1,4-Dichloro-2-butene		4.96	ug/L	1.0	99	70	130			
Acetone		37.2	ug/L	20	74	70	130			
Acrylonitrile		48.0	ug/L	20	96	70	130			
Benzene		5.28	ug/L	1.0	106	70	130			
Bromochloromethane		4.72	ug/L	1.0	94	70	130			
Bromodichloromethane		4.36	ug/L	1.0	87	70	130			
Bromoform		4.40	ug/L	1.0	88	70	130			
Bromomethane		5.12	ug/L	1.0	102	70	130			
Carbon disulfide		5.40	ug/L	1.0	108	70	130			
Carbon tetrachloride		5.44	ug/L	1.0	109	70	130			
Chlorobenzene		4.96	ug/L	1.0	99	70	130			
Chlorodibromomethane		4.48	ug/L	1.0	90	70	130			
Chloroethane		5.16	ug/L	1.0	103	70	130			
Chloroform		4.92	ug/L	1.0	98	80	120			
Chloromethane		5.52	ug/L	1.0	110	70	130			
1,2-Dibromo-3-chloropropane		4.12	ug/L	1.0	82	70	130			
1,2-Dibromoethane		4.32	ug/L	1.0	86	70	130			
Dibromomethane		4.20	ug/L	1.0	84	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
Dichlorodifluoromethane		5.40	ug/L	1.0	108	70	130			
1,1-Dichloroethane		5.28	ug/L	1.0	106	70	130			
1,2-Dichloroethane		4.52	ug/L	1.0	90	70	130			
1,1-Dichloroethene		5.32	ug/L	1.0	106	80	120			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
trans-1,2-Dichloroethene		5.40	ug/L	1.0	108	70	130			
1,2-Dichloropropane		4.52	ug/L	1.0	90	80	120			
cis-1,3-Dichloropropene		4.52	ug/L	1.0	90	70	130			
trans-1,3-Dichloropropene		4.64	ug/L	1.0	93	70	130			
Ethylbenzene		5.40	ug/L	1.0	108	80	120			
2-Hexanone		41.6	ug/L	20	83	70	130			
Iodomethane		5.28	ug/L	1.0	106	70	130			
Methyl ethyl ketone		39.4	ug/L	20	79	70	130			
Methyl isobutyl ketone		41.6	ug/L	20	83	70	130			
Methylene chloride		4.72	ug/L	1.0	94	70	130			
Styrene		4.72	ug/L	1.0	94	70	130			
1,1,1,2-Tetrachloroethane		4.88	ug/L	1.0	98	70	130			
1,1,2,2-Tetrachloroethane		4.52	ug/L	1.0	90	70	130			
Tetrachloroethene		5.32	ug/L	1.0	106	70	130			
Toluene		5.00	ug/L	1.0	100	80	120			
1,1,1-Trichloroethane		5.44	ug/L	1.0	109	70	130			
1,1,2-Trichloroethane		4.24	ug/L	1.0	85	70	130			
Trichloroethene		5.16	ug/L	1.0	103	70	130			
Trichlorofluoromethane		5.80	ug/L	1.0	116	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Analytical Run: R83853								
Sample ID: CCV102212A	54	Continuing Calibration Verification Standard								10/22/12 09:38
1,2,3-Trichloropropane		4.40	ug/L	1.0	88	70	130			
Vinyl acetate		3.75	ug/L	1.0	75	70	130			
Vinyl chloride		5.76	ug/L	1.0	115	80	120			
m+p-Xylenes		10.8	ug/L	1.0	108	70	130			
o-Xylene		5.12	ug/L	1.0	102	70	130			
Xylenes, Total		15.9	ug/L	1.0	106	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	84	69.7	142			
Surr: Dibromofluoromethane				1.0	99	69.9	128			
Surr: p-Bromofluorobenzene				1.0	101	83.7	119			
Surr: Toluene-d8				1.0	97	75.5	125			

Method: SW8260B		Batch: R83853								
Sample ID: LCS102212A	54	Laboratory Control Sample								10/22/12 10:14
trans-1,4-Dichloro-2-butene		5.04	ug/L	1.0	101	70	123			
Acetone		43.2	ug/L	20	86	57.3	142			
Acrylonitrile		45.6	ug/L	20	91	73.2	133			
Benzene		5.28	ug/L	1.0	106	73.7	125			
Bromochloromethane		4.92	ug/L	1.0	98	64.6	125			
Bromodichloromethane		4.48	ug/L	1.0	90	70.9	126			
Bromoform		4.36	ug/L	1.0	87	68.7	120			
Bromomethane		5.12	ug/L	1.0	102	43.5	144			
Carbon disulfide		5.64	ug/L	1.0	113	62.5	149			
Carbon tetrachloride		5.80	ug/L	1.0	116	68.8	123			
Chlorobenzene		4.88	ug/L	1.0	98	78.3	121			
Chlorodibromomethane		4.20	ug/L	1.0	84	69.7	118			
Chloroethane		6.16	ug/L	1.0	123	49.1	152			
Chloroform		4.80	ug/L	1.0	96	67.6	124			
Chloromethane		5.84	ug/L	1.0	117	67.9	134			
1,2-Dibromo-3-chloropropane		4.48	ug/L	1.0	90	58.2	138			
1,2-Dibromoethane		4.04	ug/L	1.0	81	70.6	114			
Dibromomethane		4.16	ug/L	1.0	83	64.2	126			
1,2-Dichlorobenzene		5.08	ug/L	1.0	102	78	125			
1,4-Dichlorobenzene		4.92	ug/L	1.0	98	78.1	117			
Dichlorodifluoromethane		6.04	ug/L	1.0	121	65.6	148			
1,1-Dichloroethane		5.08	ug/L	1.0	102	73	130			
1,2-Dichloroethane		4.36	ug/L	1.0	87	71	137			
1,1-Dichloroethene		5.16	ug/L	1.0	103	59.3	137			
cis-1,2-Dichloroethene		5.00	ug/L	1.0	100	78.3	122			
trans-1,2-Dichloroethene		5.08	ug/L	1.0	102	69.3	128			
1,2-Dichloropropane		4.52	ug/L	1.0	90	72.3	140			
cis-1,3-Dichloropropene		4.60	ug/L	1.0	92	77	125			
trans-1,3-Dichloropropene		4.32	ug/L	1.0	86	74.7	123			
Ethylbenzene		5.08	ug/L	1.0	102	75.5	130			
2-Hexanone		45.2	ug/L	20	90	72.6	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83853
Sample ID: LCS102212A	54	Laboratory Control Sample				Run: 1SATURN_121022A				10/22/12 10:14
Iodomethane		4.16	ug/L	1.0	83	41.4	130			
Methyl ethyl ketone		43.2	ug/L	20	86	57.5	140			
Methyl isobutyl ketone		47.6	ug/L	20	95	72.7	124			
Methylene chloride		4.20	ug/L	1.0	84	63.1	131			
Styrene		4.56	ug/L	1.0	91	77.2	119			
1,1,1,2-Tetrachloroethane		4.52	ug/L	1.0	90	74	119			
1,1,2,2-Tetrachloroethane		4.32	ug/L	1.0	86	77.6	120			
Tetrachloroethene		4.76	ug/L	1.0	95	72.6	127			
Toluene		4.92	ug/L	1.0	98	65.3	130			
1,1,1-Trichloroethane		5.32	ug/L	1.0	106	72.2	121			
1,1,2-Trichloroethane		4.24	ug/L	1.0	85	74.7	128			
Trichloroethene		5.04	ug/L	1.0	101	69	129			
Trichlorofluoromethane		5.04	ug/L	1.0	101	54.8	141			
1,2,3-Trichloropropane		4.28	ug/L	1.0	86	62.5	131			
Vinyl acetate		5.20	ug/L	1.0	104	72.1	156			
Vinyl chloride		5.80	ug/L	1.0	116	77.7	132			
m+p-Xylenes		9.84	ug/L	1.0	98	76.4	125			
o-Xylene		5.08	ug/L	1.0	102	73.5	127			
Xylenes, Total		14.9	ug/L	1.0	99	37.8	157			
Surr: 1,2-Dichloroethane-d4				1.0	90	69.7	142			
Surr: Dibromofluoromethane				1.0	97	69.9	128			
Surr: p-Bromofluorobenzene				1.0	100	83.7	119			
Surr: Toluene-d8				1.0	98	75.5	125			
Sample ID: MB102212A	54	Method Blank				Run: 1SATURN_121022A				10/22/12 11:20
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83853
Sample ID: MB102212A	54	Method Blank								Run: 1SATURN_121022A 10/22/12 11:20
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	84	69.7	142			
Surr: Dibromofluoromethane				1.0	98	69.9	128			
Surr: p-Bromofluorobenzene				1.0	92	83.7	119			
Surr: Toluene-d8				1.0	93	75.5	125			
Sample ID: H12100215-001CMS	54	Sample Matrix Spike								Run: 1SATURN_121022A 10/22/12 20:00
trans-1,4-Dichloro-2-butene		9.76	ug/L	1.0	98	70	123			
Acetone		82.4	ug/L	40	82	57.3	142			
Acrylonitrile		101	ug/L	40	101	73.2	133			
Benzene		9.92	ug/L	1.0	99	73.7	125			
Bromochloromethane		9.92	ug/L	1.0	99	64.6	125			
Bromodichloromethane		10.0	ug/L	1.0	100	70.9	126			
Bromoform		8.72	ug/L	1.0	87	68.7	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83853
Sample ID: H12100215-001CMS 54 Sample Matrix Spike										Run: 1SATURN_121022A 10/22/12 20:00
Bromomethane		11.6	ug/L	1.0	116	43.5	144			
Carbon disulfide		11.1	ug/L	1.0	111	62.5	149			
Carbon tetrachloride		10.2	ug/L	1.0	102	68.8	123			
Chlorobenzene		10.1	ug/L	1.0	101	78.3	121			
Chlorodibromomethane		8.72	ug/L	1.0	87	69.7	118			
Chloroethane		9.84	ug/L	1.0	98	49.1	152			
Chloroform		10.2	ug/L	1.0	94	67.6	124			
Chloromethane		9.84	ug/L	1.0	98	67.9	134			
1,2-Dibromo-3-chloropropane		8.96	ug/L	1.0	90	58.2	138			
1,2-Dibromoethane		8.08	ug/L	1.0	81	70.6	114			
Dibromomethane		9.76	ug/L	1.0	98	64.2	126			
1,2-Dichlorobenzene		9.44	ug/L	1.0	94	78	125			
1,4-Dichlorobenzene		9.92	ug/L	1.0	99	78.1	117			
Dichlorodifluoromethane		10.7	ug/L	1.0	107	65.6	148			
1,1-Dichloroethane		10.2	ug/L	1.0	102	73	130			
1,2-Dichloroethane		9.20	ug/L	1.0	92	71	137			
1,1-Dichloroethene		10.4	ug/L	1.0	104	59.3	137			
cis-1,2-Dichloroethene		9.12	ug/L	1.0	91	78.3	122			
trans-1,2-Dichloroethene		10.4	ug/L	1.0	104	69.3	128			
1,2-Dichloropropane		9.84	ug/L	1.0	98	72.3	140			
cis-1,3-Dichloropropene		9.60	ug/L	1.0	96	77	125			
trans-1,3-Dichloropropene		9.44	ug/L	1.0	94	74.7	123			
Ethylbenzene		10.6	ug/L	1.0	106	75.5	130			
2-Hexanone		99.2	ug/L	40	99	72.6	127			
Iodomethane		8.40	ug/L	1.0	84	41.4	130			
Methyl ethyl ketone		79.8	ug/L	40	80	57.5	140			
Methyl isobutyl ketone		102	ug/L	40	102	72.7	124			
Methylene chloride		9.12	ug/L	1.0	91	63.1	131			
Styrene		9.28	ug/L	1.0	93	77.2	119			
1,1,1,2-Tetrachloroethane		9.12	ug/L	1.0	91	74	119			
1,1,2,2-Tetrachloroethane		8.80	ug/L	1.0	88	77.6	120			
Tetrachloroethene		11.2	ug/L	1.0	108	72.6	127			
Toluene		10.2	ug/L	1.0	102	65.3	130			
1,1,1-Trichloroethane		10.4	ug/L	1.0	104	72.2	121			
1,1,2-Trichloroethane		8.96	ug/L	1.0	90	74.7	128			
Trichloroethene		10.6	ug/L	1.0	106	69	129			
Trichlorofluoromethane		10.2	ug/L	1.0	102	54.8	141			
1,2,3-Trichloropropane		8.88	ug/L	1.0	89	62.5	131			
Vinyl acetate		11.8	ug/L	1.0	118	72.1	156			
Vinyl chloride		10.6	ug/L	1.0	106	77.7	132			
m+p-Xylenes		20.6	ug/L	1.0	103	76.4	125			
o-Xylene		10.1	ug/L	1.0	101	73.5	127			
Xylenes, Total		30.6	ug/L	2.0	102	37.8	157			
Surr: 1,2-Dichloroethane-d4				2.0	88	69.7	142			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83853
Sample ID: H12100215-001CMSD	54	Sample Matrix Spike		Run: 1SATURN_121022A					10/22/12 20:00	
Surr: Dibromofluoromethane				2.0	94	69.9	128			
Surr: p-Bromofluorobenzene				2.0	98	83.7	119			
Surr: Toluene-d8				2.0	102	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Sample ID: H12100215-001CMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_121022A					10/22/12 20:30	
trans-1,4-Dichloro-2-butene		10.7	ug/L	1.0	107	70	123	9.4		20
Acetone		97.6	ug/L	40	98	57.3	142	17		20
Acrylonitrile		104	ug/L	40	104	73.2	133	3.1		20
Benzene		10.1	ug/L	1.0	101	73.7	125	1.6		20
Bromochloromethane		10.2	ug/L	1.0	102	64.6	125	3.2		20
Bromodichloromethane		10.4	ug/L	1.0	104	70.9	126	3.9		20
Bromoform		9.28	ug/L	1.0	93	68.7	120	6.2		20
Bromomethane		12.8	ug/L	1.0	128	43.5	144	9.8		20
Carbon disulfide		10.4	ug/L	1.0	104	62.5	149	6.7		20
Carbon tetrachloride		10.2	ug/L	1.0	102	68.8	123	0.8		20
Chlorobenzene		10.5	ug/L	1.0	105	78.3	121	3.9		20
Chlorodibromomethane		9.28	ug/L	1.0	93	69.7	118	6.2		20
Chloroethane		10.6	ug/L	1.0	106	49.1	152	7.1		20
Chloroform		10.4	ug/L	1.0	96	67.6	124	1.6		20
Chloromethane		9.36	ug/L	1.0	94	67.9	134	5.0		20
1,2-Dibromo-3-chloropropane		10.1	ug/L	1.0	101	58.2	138	12		20
1,2-Dibromoethane		8.72	ug/L	1.0	87	70.6	114	7.6		20
Dibromomethane		9.76	ug/L	1.0	98	64.2	126	0.0		20
1,2-Dichlorobenzene		9.84	ug/L	1.0	98	78	125	4.1		20
1,4-Dichlorobenzene		9.76	ug/L	1.0	98	78.1	117	1.6		20
Dichlorodifluoromethane		10.4	ug/L	1.0	104	65.6	148	3.0		20
1,1-Dichloroethane		10.7	ug/L	1.0	107	73	130	5.4		20
1,2-Dichloroethane		9.44	ug/L	1.0	94	71	137	2.6		20
1,1-Dichloroethene		10.5	ug/L	1.0	105	59.3	137	0.8		20
cis-1,2-Dichloroethene		9.52	ug/L	1.0	95	78.3	122	4.3		20
trans-1,2-Dichloroethene		10.2	ug/L	1.0	102	69.3	128	2.3		20
1,2-Dichloropropane		10.4	ug/L	1.0	104	72.3	140	5.5		20
cis-1,3-Dichloropropene		10.0	ug/L	1.0	100	77	125	4.1		20
trans-1,3-Dichloropropene		9.52	ug/L	1.0	95	74.7	123	0.8		20
Ethylbenzene		10.4	ug/L	1.0	104	75.5	130	1.5		20
2-Hexanone		101	ug/L	40	101	72.6	127	1.6		20
Iodomethane		7.89	ug/L	1.0	79	41.4	130	6.3		20
Methyl ethyl ketone		78.4	ug/L	40	78	57.5	140	1.8		20
Methyl isobutyl ketone		108	ug/L	40	108	72.7	124	6.1		20
Methylene chloride		10.4	ug/L	1.0	104	63.1	131	13		20
Styrene		9.84	ug/L	1.0	98	77.2	119	5.9		20
1,1,1,2-Tetrachloroethane		9.44	ug/L	1.0	94	74	119	3.4		20
1,1,2,2-Tetrachloroethane		9.60	ug/L	1.0	96	77.6	120	8.7		20
Tetrachloroethene		11.2	ug/L	1.0	108	72.6	127	0.0		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/23/12
Work Order: H12100280

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R83853
Sample ID: H12100215-001CMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_121022A 10/22/12 20:30
Toluene		10.2	ug/L	1.0	102	65.3	130	0.0		20
1,1,1-Trichloroethane		10.2	ug/L	1.0	102	72.2	121	1.6		20
1,1,2-Trichloroethane		9.04	ug/L	1.0	90	74.7	128	0.9		20
Trichloroethene		11.0	ug/L	1.0	110	69	129	3.0		20
Trichlorofluoromethane		9.92	ug/L	1.0	99	54.8	141	3.2		20
1,2,3-Trichloropropane		9.44	ug/L	1.0	94	62.5	131	6.1		20
Vinyl acetate		12.6	ug/L	1.0	126	72.1	156	6.5		20
Vinyl chloride		11.0	ug/L	1.0	110	77.7	132	4.4		20
m+p-Xylenes		21.8	ug/L	1.0	109	76.4	125	6.0		20
o-Xylene		10.1	ug/L	1.0	101	73.5	127	0.0		20
Xylenes, Total		31.9	ug/L	2.0	106	37.8	157	4.1		20
Surr: 1,2-Dichloroethane-d4				2.0	89	69.7	142			
Surr: Dibromofluoromethane				2.0	99	69.9	128			
Surr: p-Bromofluorobenzene				2.0	96	83.7	119			
Surr: Toluene-d8				2.0	103	75.5	125			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Workorder Receipt Checklist

Hydrometrics Inc

H12100280

Login completed by: Tracy L. Lorash

Date Received: 10/16/2012

Reviewed by: BL2000\ablackburn

Received by: TLL

Reviewed Date: 10/23/2012

Carrier Hand Del
name:

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time?
(Exclude analyses that are considered field parameters
such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) Yes ☒ No ☐

Temp Blank received? Yes ☐ No ☒ Not Applicable ☐

Container/Temp Blank temperature: 6.2°C On Ice - From Field

Water - VOA vials have zero headspace? Yes ☒ No ☐ No VOA vials submitted ☐

Water - pH acceptable upon receipt? Yes ☐ No ☐ Not Applicable ☒

Contact and Corrective Action Comments:

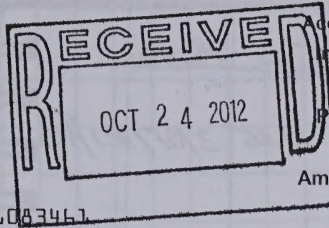
None

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

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Remit To: Energy Laboratories Inc
Accounts Receivable
PO Box 30975
Billings, MT 59107-0975



Account Number: H1014
Invoice Number: 321060375
Invoice Date: 10/23/2012
Purchase Order: HLN10061
Invoice Total: \$220.00
Amount Received: \$0.00
Amount Due: \$220.00

H10143210603750000220000321063461

Detach and Return Stub with Payment

BILL TO: Hydrometrics Inc
Attn: Marta Peters
3020 Bozeman Ave
Helena, MT 59601

INVOICE

Invoice Date: October 23, 2012

Invoice No: 321060375



Purchase Order HLN10061

Account Number H1014

TERMS: NET 30 DAYS
Interest charged after 30 days 1.5% per month.
VISA/MasterCard payments accepted.

3161 East Lyndale Avenue • Helena, MT 59601
(406) 442-0711

Project Name: 1273 City of Helena

Item	Remarks	Matrix	Test Price	Mult	Price	Qty	Test Total
WorkOrder H12100280							
8260-Volatile Organic Comp, 40 CFR Part 258 App I		Aqueous	\$220.00	1	\$220.00	1	\$220.00

Comments:

Subtotal: \$220.00

Order Amount: 220.00

INVOICE TOTAL: \$220.00

Amount Received: \$0.00

AMOUNT DUE: \$220.00

Site	Sample Code	Date	Time	Bottles
Sprinkler	CHHL-1210-100	10/16/12	10:25	3/10F/11C1/V06

Weather: Overcast, light rain, 50°

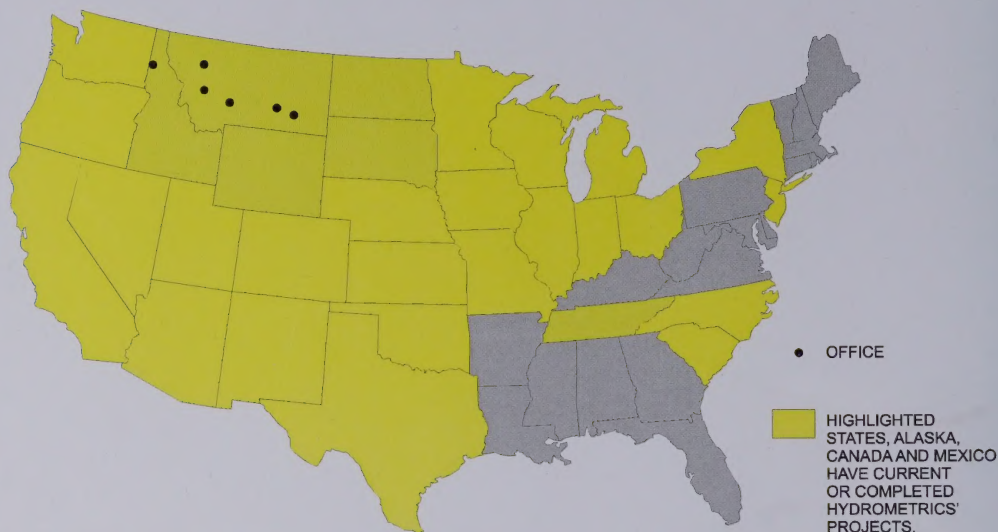
GWES

Site	Time	Hour	Flow	Totalizer
HL-99-1	10:45	3628.1 3628.1	12.710	5414270 221670
HL-99-2	10:40	3116.1	19.72	6612510 4174320
HL-99-3	10:35	31.44 ~ ~	2565.7	6527260 3424380

Tom Packer
10/16/12

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

HFORM-1 07/11
TNO 406-443-8550



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